The Journal of the American Medical Association

VOL. XXIII. CHICAGO, DECEMBER 15, 1894. No. 24.

ORIGINAL ARTICLES.

ORIGINAL INVESTIGATIONS ON THE NATURAL HISTORY, (SYMPTOMS AND PATHOLOGY) OF YELLOW FEVER. 1854–1894.

BY JOSEPH JONES, M.D., LL.D.

NEW ORLEANS, LA.

Yellow fever (vomito; vomito prieto; vomito negro, fièvre matelotte; febris flava; fièvre jaunne; gelbes fieber; febbre grilla; febris icterodes; typhus icterodes; typhus tropicus; typhus d' Amérique; fiebre amarilla; coap de banc; febris maligna biliosa Americana flava; bulam fever; hemogastric pestilence; pestilentia hemogastrica; synochus icterodes; causus; febris flava Americanorum, epanetus malignus flavus; typhus jaune; ichwaites erbrechen westendisches fieber; fiebre yialla; black vomit; malignant yellow fever; pestilential fever; epidemic yellow fever; specific yellow fever.)

DEFINITION.

A pestilential fever, of a continuous and specific type, originally developed in tropical and insular America; confined to definite geographical limits, and dependent in its origin and spread upon definite degrees of temperature, and capable of transportation and propagation on ships and in towns and cities in those portions of North and South America which lie between 45° N. latitude and 35° S. latitude. The disease has been limited chiefly to the coast of tropical America, rather from the number and position of the commercial centers, than from any climatic causes adverse to its propagation elsewhere. It has been imported chiefly from the Antilles, and from the cities of tropical America by ships into the Gulf and Atlantic cities of the United States, and into Cadiz, Carthagena, Barcelona, Gibraltar, Lisbon, Saint Nazain in the department of the lower Loire, and into Plymouth and Southampton in Europe; and it has been imported and become epidemic as far south as Montevideo and Buenos Ayres in South America. As a general rule, it has originated and become endemic in cities situated in low, unhealthy malarious districts on the sea or river coasts of insular and tropical America, and has rarely occurred at an elevation of 2,500 feet above the level of the sea; in Jamaica it has prevailed at Stoney Hill, 1,300 feet above the sea, and at Newcastle 4,000 feet above the sea; according to Alexander Humboldt, it has never ascended in Mexico to 3,044 feet above the level of the sea, below which limit the Mexican oaks do not flourish, showing that the constant average temperature below this is of a tropical character.

In the United States the disease has never in its epidemic form reached an elevation of 500 feet, and it has been observed that its epidemic course or limit coincides to a certain extent with the range of the growth of the live-oak, the cypress and the long moss. The inhabitants of the barren rock of Gibraltar, at an elevation of between 1,400 and 1,439 feet above the level of the sea, have been desolated by this disease upon more than one occasion. It is certain that yellow fever has prevailed in the celebrated table land of Caracas, 3,000 feet above the level of the sea. In the remarkable epidemic of yellow fever which prevailed in Peru in 1855 and 1856, the disease passed over the barrier of the Andes, committing fearful ravages in Andine and trans-Andine regions, at elevations of 14,000 feet above the level of the sea. The stereotyped expressions of systematic writers, as to the limitation of yellow fever to certain elevations and to the sea and river coasts must in the light of the preceding facts be abandoned.

Yellow fever presents two well defined stages; the first characterized by severe pains in the head, confined chiefly to the orbits and forehead, back and lower extremities, a peculiar shining or drunken appearance in the eyes, rapid circulation, elevated temperature, and increase of those constituents as urea, uric acid, phosphoric acid and sulphuric acid which result from the increased chemic changes induced by the febrile poisons; and which stage may extend from 36 to 150 hours, without any distinct remissions, according to the severity of the disease; the second characterized by depression of the nervous and muscular forces, and of the general and capillary circulation, capillary congestion, slow and intermittent pulse, jaundice, a purplish and yellowish mottled appearance of the surface, urinary suppression, albuminous urine loaded with granular casts of the urinary tubes, fatty degeneration of the heart, liver and kidneys, defibrination of the blood, passive hemorrhages from ears, stomach and bowels, nares, tongue, gums, uterus, vagina, gall bladder and anus, and in extreme cases from the eyes, ears and skin, black vomit, interstitial hemorrhages, delirium, convulsions and coma. In its origin and propagation, it appears not to be dependent on those conditions and causes, which generate malarial paroxysmal fever, from which it differs essentially in symptoms and pathology.

One of the prominent symptoms of the first stage is that rapid increase of the pulse, within the first few hours of the febrile excitement, and the progressive diminution of the beats of the heart, even while the temperature progressively rises; and in like manner, the slow and feeble action of the heart constitutes a prominent and striking symptom of the second stage. Yellow fever, in common with such contagious diseases as smallpox, measles and scarlet fever occurs as a general rule, but once during life, and may be propagated by contagion; it differs, however, from the exanthematous diseases, in that it has never been known to propagate beyond 48° N., and 38° S. latitude, nor below a temperature of 65 degrees F. The symptoms of yellow fever may be divided for description and investigation into:

1. Those manifested during the period of incuba-

tion, or that period of time which elapses between the introduction of the poison inducing the disease and the actual manifestation of the febrile phenomena. As this stage is of uncertain duration, the disease sparing neither age nor sex, those only being exempt from its influence who have, at some former time, been subjected to the action of the yellow fever poison, and its attacks being confined neither to the night or the day, nor to any special state of the system, whether of fasting or repletion, of plethora or anemia, of robust health or chronic disease; and as the disease often attacks suddenly those who are apparently in perfect health, who are seized with intense headache, chill, shivering pain in the limbs and back, followed by rapid elevation of temperature, increased action of the circulation, animated congested countenance, red, glistening suffused eyes, intense thirst, anorexia, uneasiness of the epigastrium, nausea and vomiting; the investigation of the phenomena of the stage of incubation is attended with great difficulty and much uncertainty.

While it must be admitted, that during the time which elapses from the moment of the effective action of the cause, to that of the manifestation of the disease, changes are produced in the blood and nervous system and which, although producing no recognized obstacle to the healthy performance of the functions, are not the less real, and increase up to the moment of the final explosion of the disease; but as to the nature of these changes in the system, we know nothing, and the subject is open for investigation. The difficulty of such an inquiry is clearly recognized, when we consider the want of knowledge of the nature of malaria, of the constituents of emanations from the soil, and of other imputed sources of pestilential diseases; the mist of ignorance and prejudice involving these agents, and exaggerating their influence, and their inferred nature and operation, without further proof of their existence than certain effects which have been imputed to them either upon insufficient data, or even without the smallest evidence.

A sure foundation for the investigation will be reached, when the yellow fever poison is isolated; either from the soil, waters, or atmosphere, or from the diseased human body. Our knowledge has not and will not be advanced by hypothetical discussions as to the mineral, vegetable or animal origin and nature of the yellow fever poison; and the time wasted in such arguments would be much better employed by careful physical, chemic, microscopic and physiologic investigation of the waters, atmosphere and soil and of the minute flora and fauna of those regions and places in which the disease is endemic and epidemic.

2. The symptoms manifested during the exhibition of the first disturbances in the nervous and circulatory systems are characterized by chilly sensations, and changes of temperature, and severe pains in the head and loins, restlessness, mental depression and anorexia. The symptoms of this stage, which may be called that of chill or primary depression, are not uniform; in some cases, and even in those of the greatest violence, chill and chilly sensations are entirely absent; in others, the chill amounts only to a sensation of coldness, sometimes slight; at others, deep, penetrating and stupefying, or alternating with flushes of heat and crawling sensations; while in others, the febrile excitement is preceded by chills of greater or less severity and duration, with a constriction or contraction of the extreme peripheral vessels, and a shriveled appearance of the skin; in some cases again, the disease is ushered in by giddiness, bearing some analogy to that produced by inebriating liquors; and in others it has been known to have commenced with convulsions.

The presence or absence of chills and chilly sensations can not, therefore, be regarded as characteristic of yellow fever; and the chills, when most strongly marked, appear to differ materially from the chill of paroxysmal malarial fever, in that there is an absence of uniformity in the phenomena, and that the chill or cold stage of yellow fever partakes rather of the aberrated nervous actions and sensations, referable to the action of the causes producing the intense pain in the head and loins, than that marked depression of the temperature of the periphery and elevation of the temperature of the internal organs, even to the degree of 107 degrees F., which I have shown by careful observation to be characteristic of the[1] true malarial paroxysmal chill.

The chill and chilly sensations of the early stages of yellow fever, appear rather to be related to the same manifestations of aberrated nervous action in the early stages of various acute diseases, as pneumonia, pleuritis and smallpox. As these symptoms are often absent in yellow fever, as they occur in the earlier stages, and as they are in most cases of short duration, it is not often that the physician has the opportunity of investigating the phenomena by means of the thermometer and sphygmograph, and by the careful collection and analysis of the urine during this period.

3. The symptoms of the stage of reaction, or active febrile excitement following the chill and chilly sensations, or arising as it were spontaneously, with but few premonitory symptoms beyond uneasiness and pain in the head, loins, and limbs, and general prostration and languor, characterized by rapid elevation of temperature, which is maintained with slight morning and evening oscillations, and with a progressive descent to the normal standard, for periods varying in different cases, from one to six days. During this stage of active febrile excitement, profound changes are induced by the yellow fever poison, by the products to which it gives rise in the blood and organs. The maximum elevation of temperature is rapidly attained, and may range during the first days of the disease, according to its severity, from 102 degrees F. to 110 degrees F. in the axilla, and it is probable that the internal organs attain a still higher temperature. As a general rule, from the third to the fifth day, the temperature steadily falls and sinks to the normal standard and even below; in some fatal cases it rises again toward the end, rarely, however, reaching or exceeding 104 degrees F., and never attaining the high degree of temperature characteristic of the stage of active febrile excitement.

The supervention of an inflammatory disease or the occurrence of an abscess will, in like manner, cause a progressive elevation of temperature, with slight evening exacerbations; but as a general rule, the secondary elevation of temperature thus caused never attains the maximum of the stage of active febrile excitement.

[1] Observations on some of the Physical, Chemical, Physiological and Pathological Phenomena of Malarial Fever, Transactions AMERICAN MEDICAL ASSOCIATION, 1859.

When malarial paroxysmal fever is engrafted on yellow fever in its later stages, or during the period of convalescence, the temperature during this hot stage may even exceed the maximum of the hot stage of yellow fever, but will be characterized by sudden periodic depressions and elevations, recurring at definite intervals. The pulse, at the commencement of the attack, when the period of reaction or active chemic change has fairly set in, is often rapid (ranging from 100 to 140 per minute), strong, tense and full; in other cases it is rapid but feeble and compressible; the increase in the frequency of the pulse does not, however, as a general rule, continue to correspond with the elevation and oscillations of temperature; and in many cases, the remarkable phenomenon is witnessed of the pulse progressively decreasing in frequency, and even descending below the normal standard, while the temperature is maintained at an elevated degree; and in the examination and comparison of these discrepancies between the frequency and character of the pulse, and the oscillations of the temperature the observer is forced to the conclusion that during the hot stage, some poison or depressing agent is acting upon the heart, or upon the nerves which supply its muscular structures and regulate its actions, thus deranging the nutrition and molecular structure of the muscular fibers. On the other hand, the pulse frequently increases in rapidity, but diminishes in force near the fatal issue.

The occurrence of copious hemorrhages from the stomach and bowels may be attended with sudden depressions of temperature and increase in frequency, but diminution in force and fullness of the pulse.

The stage of febrile excitement is not of fixed duration, and may, in some cases of the gravest character, appear to be comparatively mild and unimportant, attracting so little attention, and the pains, wherever seated, may be so mild, and there may be such an absence of agitation and delirium, and the strength of the patient may be diminished to so slight a degree, that both patient and physician may be deceived and the patient may die without taking to his bed, *on foot*, as it were.

Case 1.—Louis[2] recounts the case of Dr. Mathias, who died after an illness of four or five days, and who experienced no other symptoms but some pains in the calves of the legs and a suppression of urine. He had no nausea; he did not vomit. His mind was clear through the whole course of the disease. He noticed the continuance of the suppression of urine; dictated three or four letters to a friend; begged him to write rapidly, so that he might sign his name, then devoted a little time to an affectionate intercourse with this friend, and soon after, unable to speak, he thanked his friend with a sign, and in a quarter of an hour he was dead.

Case 2.—In the month of October, 1870, a stout Irishman walked up from the gate of the Charity Hospital of New Orleans, and entered one of the wards on the third floor up stairs, presenting to the casual observer no special marks of disease beyond some congestion of the capillaries of the face and extremities, a dusky, livid hue, a slight increase of heat, and restlessness. A few hours after entering this ward, he vomited about one quart of black vomit, and died in convulsions twenty-four hours after his entrance into the ward. The black vomit ejected during life, as well as the portion which filled the stomach after death, presented the appearance and character of dark grumous blood, was of high specific gravity and alkalin reaction, contained both ammonia and urea, and also an immense number of altered, colored blood corpuscles. Careful microscopic examination with lenses of different powers, ranging from one-quarter to one-eighteenth of an inch, revealed no animalculæ or vegetable organisms (vibrioe and fungi are frequently present in black vomit, but as far as my observations extend, they have nothing to do with its causation). The superior portions of the body of this patient, after death, presented a deep golden yellow color, while the dependent portions presented a purplish, mottled, ecchymosed and congested appearance; the heart was pale, yellow and flabby, and contained many oil globules, and the muscular structures or fibers presented an altered appearance under the microscope; the transverse striæ being less distinct, and the interior of the muscular fibrillæ, as well as the connective tissues, being loaded with oil globules. The kidneys were pale and of a yellow color, resembling that of the heart, and the excretory tubes were filled with albuminous and fibroid granular matter, excretory cells, and oil globules. The bladder contained no urine, there having been complete urinary suppression since the entrance of the patient into the hospital. The liver presented the usual yellow color and bloodless appearance of this organ in yellow fever, and the liver cells contained an abnormal amount of oil.

In these changes yellow fever resembles acute phosphorus poisoning.

The gall-bladder, as is usual in this disease, contained only a small quantity of yellow bile, not exceeding one hundred grains in amount; while in malarial fever, on the other hand, the gall-bladder, after death, is almost universally distended with dark, greenish-black bile of high specific gravity, and generally about one thousand grains in amount.

In some cases of yellow fever which I have observed in New Orleans, the symptoms have rapidly changed from active excitement to utter prostration, and the patients have been speedily destroyed by hemorrhage from the bowels, without any vomiting of the altered blood and gastric secretions which constitute black vomit. I have also observed cases, in which hemorrhage of black blood had taken place in the gall-bladder. In such cases the gall-bladder has been distended with a dark grumous liquid, which upon microscopic and chemic examination proved to be defibrinated blood, without any admixture of bile.

As far as my observations extend, *suppression* of urine is a universally fatal symptom, and is the prime cause, not only of the copious hemorrhages from the stomach and bowels, but also of various alterations of the blood and nervous disturbances, and of the sudden and apparently inexplicable deaths.

Suppression of urine in yellow fever is attended with the accumulation of the constituents usually eliminated by the kidneys, as urea in the blood, brain, liver and heart and muscular organs, as I have demonstrated by numerous analyses. Bile also accumulates in such cases. The presence of the coloring matter of the bile in large amounts in the circulatory fluid may be demonstrated by a simple experiment; thus, if a drop of blood be dropped upon a piece of filtering paper, a brilliant red central spot will mark the presence of the colored blood corpuscles, and this will be surrounded by a bright golden border or ring, due to the absorption of the serum deeply tinged with bile.

The peculiar indifference and even intoxication which mark the cases of suppression of urine are referable chiefly to the retention of the constituents of the urine and the bile.

The changes of the blood in such cases of yellow fever are characterized chiefly by great diminution of the fibrin, which, in some cases, I have found to be not one hundredth of the usual amount; and by the abnormal amounts of urea and ammonia and of the sulphates, phosphates and extractive matters.

I have found the stomach and intestines so charged with ammonia, even when examined within three

[2] Documens Recuellis par MM. Chervin, Louis et Trousseau, Membres de la Commission Médicale Française envoyée à Gibraltar pour observe l'epidemie de 1828, et par M. le Dr. Barry. Two Vols. Paris, 1830. Researches on the Yellow Fever of Gibraltar, by Dr. Ch. A. Jones.

hours after death, that a rod dipped in hydrochloric acid, held over the mucous membrane of the stomach and intestines, gave forth dense white fumes (chlorid of ammonium).

It is without doubt, true, that the poison of yellow fever acts as a direct irritant or poisonous agent upon the mucous membrane of the stomach, not only by deranging its nervous supply and capillary circulation, but also by directly altering the nutrition and secretion of its active cellular elements; but at the same time it is also true that the poison acts equally, if not to a more marked degree, upon the liver and kidneys, thus causing in many cases complete suppression of the function of both organs, and the consequent contamination of the blood with bile, urea and extractive matters and ammonia.

The excrementitious matters thus retained in the blood not only exert a depressing action upon the nervous and circulatory systems, and change the important nutritive actions of the colored blood corpuscles, but the urea, eliminated as such, and as carbonate of ammonia by the gastro-intestinal mucous membrane, alters the constitution of the intestinal and gastric juices, and directly the mucous membrane of the stomach and bowels.

Analogous cases to those just described are witnessed in the action of certain violent poisons, which act alike upon the nervous system and the blood.

It is but just for us to view such cases as a febrile action of an infectious character, deriving its peculiar characters and malignity, from the nature of the cause, which produces such profound disturbances in the nervous system, blood and organs that only a feeble and powerless reaction is possible under the action of so violent a poison.

The action of the poison of yellow fever, during the stage of active febrile excitement, is manifested not only by the intense pain in the head and back, and by the florid congestion of the capillaries of the eyes and skin, and by the loss of appetite and nausea, and by the elevation in the temperature and increase in the frequency of the pulse, but also by the appearance of albumen in the urine, which is rarely absent, and may make its appearance upon the first day of the febrile excitement.

While it is true that the excretory cells and casts of the urinary tubes appear simultaneously with the albumen in the urine, I have also shown by careful analyses of the urine, that the presence of this constituent of the blood in the urine, is not to be referred wholly to acute desquamation of the excretory cells and tubes of the kidney, nor to mere capillary congestion similar in all respects to that in other organs, but equally to the chemic change effected by the poison of yellow fever upon the albumen of the blood.

I have shown by continuous observation and analysis, during different stages of the disease, that the albumen appears in large amounts in cases where there is apparently no failure in the excretory action of the kidneys, and in which the urine was abundant and loaded with urea and other constituents of the urine, and also with bile. While the presence of the blood corpuscles and coloring matters of the blood may be determined by chemic and microscopic investigation of the urine in some cases of yellow fever, at the same time the presence of these constituents of the blood are not uniform and characteristic, as in the cases of that form of severe malarial fever, which, in our Southern States, is now known as malarial hematuria.

In this latter disease the casts and excretory cells of the kidney tubes may be present in considerable numbers, but only that amount of albumen is present which would correspond to the colored blood corpuscles and coloring matters of the blood escaping at the same time.

In yellow fever, on the other hand, even when blood appears in the urine, the albumen is vastly more abundant than the colored blood corpuscles.

The congestion, so marked upon the mucous membrane of the eyes, and upon the breasts and arms, in some cases, a "subcutaneous rash," extends also to the internal organs, and is best observed in the injected nares, crimson lips, scarlet tip and edges of the tongue, and brilliant congested fauces. The fact that the examination of the congested throat causes nausea and retching, when the tongue is pressed down by the finger or spatula, is of importance as a diagnostic sign; and Blair affirmed that when marked congestion is not observed in the eyes and nares and throat in yellow fever, it will be observed by means of the speculum, in the mucous membrane of the anus and vagina. This intense capillary congestion not only characterizes the mucous membrane of the stomach in yellow fever, but it is even manifested in the pericardium after death.

4. The symptoms manifested during the stage of depression and exhaustion, in which the depressing effects of the preceding changes of the blood and organs induced by the action of the febrile poison and its products are manifold. In cases which terminated favorably, the deleterious substances generated during the stage of febrile excitement are gradually eliminated, and the blood purified and relieved of the altered albuminoid and fibrinous elements, and the organs especially affected by the poison, as the heart, liver and kidneys resume their healthy action.

In cases which terminate fatally, in this stage, the issue appears to be determined mainly by the profound alterations of the blood, the failure of the heart, from acute fatty degeneration, and suppression of the action of the liver and kidneys, and the consequent retention in the blood of urea and bile, the poisonous action of the constituents of the urine and bile upon the blood, and nervous and muscular systems and gastro-intestinal mucous membrane.

There appears to be no just ground for the division of the fourth stage, in accordance with the presence or absence of hemorrhage, jaundice, uremic poisoning and convulsions, for these are simply aggravations of the preceding symptoms, and must be regarded as the maximum phenomena of this stage. Neither is this stage to be regarded as similar to, or identical with the intermission or remission of malarial fever, and as an abortive attempt at the repetition of the febrile stage, in which the disease ends or aborts from adynamic incompetency to carry out the phenomena.

These stages are not of uniform duration, and there may be marked diversity in the manifestations of the symptoms in individual cases, some cases presenting, apparently, but the one stage of febrile excitement, while others, overwhelmed as it were by the poison at once, manifest only the symptoms of blood poisoning, arrest of the action of the heart and nervous system and hopeless prostration.

In mild cases, especially in children, the disease may be so slight as scarcely to attract attention, and convalescence may be established in two or three days; in many cases the stage of febrile excitement continues from two to six days, rarely extending beyond three or four days, and the patient may pass almost imperceptibly into convalescence during the stage of depression; in the severest cases the patient may be carried off in two or three days and die with an elevated temperature; while in other severe cases, which end fatally either from hemorrhage from the stomach and bowels, or from urinary suppression, or from both causes, or from general prostration of the system, derangement of the blood and perverted nutrition characterized by a low adynamic fever, and abscess of the parotids, and the revival of old complaints, and the supervention of some other disease, as malarial fever, the fourth stage may be of long duration, extending over weeks and even months.

It is, however, true as a general rule, that convalescence from yellow fever is comparatively rapid, and in striking contrast with the slow and tedious convalescence of malarial fever. In some cases vomiting may be the preëminent symptom, in others, hemorrhage from the stomach and bowels, or from the gums, eyes, and ears, indicating great alteration of the blood, and especially of the fibrinous element; and in others, cerebral symptoms; but all these symptoms may be referred to certain definite results of the action of the poison of yellow fever.

Yellow fever, according to this view, partakes of the nature of a *continued pestilential fever*, presenting two well-defined stages: The first characterized by *active chemic change in the blood and organs*, attended with elevation of temperature, aberration of nervous phenomena, which may constitute the entire malady, and prove fatal in a manner similar to the infectious fever of smallpox; and the other, a *stage of depression induced both by the sedative action of the febrile poison and by the profound changes excited in the constitution of the blood, and in certain organs, as the heart, liver, and kidneys, and by the direct sedative and poisonous action of the excrementitious matters* retained in the blood, in consequence of the failure of action in the liver and kidneys, and by the arrest and perversion of digestion in consequence of the direct action of the yellow fever poison, in causing perverted nervous action of capillary congestion and active desquamation of the secretory cells of the stomach, and in consequence of the elimination of certain constituents from the blood, as the urea and carbonate of ammonia.

While the phenomena of yellow fever are well marked, and different from those of other diseases, at the same time the duration of the disease and the intensity of the symptoms will depend in each case upon the condition of the system at the time of the introduction of the poison, the various agencies to which the system is subjected during the progress of the disease, as the supply of pure air in comfortable, well-constructed and thoroughly ventilated rooms, or of impure air in filthy, damp and crowded habitations, and in filthy and crowded ships, the diet, medical treatment, climate (whether hot and dry or hot and moist, uniform or subject to great and sudden elevations and depressions of temperature, malarious or unmalarious); but the duration of the disease and the character and intensity of the symptoms will especially depend upon the extent to which the blood and organs have been involved and altered by the changes excited by the poison.

The various manifestations, as the capillary congestion, depression of the action of the heart, delirium, coma, and convulsions, vomiting, hemorrhage, and urinary suppression, uremic poisoning and jaundice, with biliary poisoning, may all be referred to the action of the poison producing the disease, and should not be erected into distinct types of disease. And even in those sudden and appalling cases in which there is such a modification of symptoms between the stage of active febrile excitement and that of active depression as to produce a deceitful sense of security, in both the medical attendant and patient, in which period of apparent calm and convalescence the patient asks for food, proclaims himself entirely restored to health, and insists upon getting up and walking about, the sudden fatal issue which astounds the friends of the patient, as well as his medical attendant, has been silently but surely induced by the failure of the kidneys to eliminate the poisonous materials from the blood, and the fatal mischief may have been working for hours and days, unobserved and unrecorded by the medical attendant, who has neglected to examine carefully, at stated intervals, the amount and character of the urinary excretion, through which the deleterious products of the poison are mainly eliminated.

While it is true, that few cases of yellow fever resemble each other exactly, some cases being characterized throughout by symptoms of excitement, and others by prostration; in some cases the cerebral symptoms being most marked, in others hemorrhage from the stomach and bowels constituting such prominent symptoms as to give a distinctive feature to the disease; at the same time there appears to be no just ground for the division of the disease into such distinctive types as would lead to the supposition that the cause might differ in different cases, and that the phenomena might not all be referred to the action and results of a definite cause.

The action of the yellow fever poison is the same in all cases, whether mild or severe; the progress and termination of each case, as well as the manifestation of the various symptoms depending upon the extent of the action of the poison, the condition of the system at the time of its introduction, the peculiarities of the constitution, and the supervention of other diseases.

In a word, the action of the yellow fever poison is distinct, and the disease is characterized by definite manifestations, just as each species of plants and animals manifests distinctive laws of development and growth and physical organization, which may be the subject of investigation and accurate description; and while the laws may be modified in their manifestation by varied extraneous causes, the grand distinctive characters are maintained, and may be propagated from age to age.

Yellow fever is a self-limited disease; it runs a definite course and then ceases. When once fairly established in the human system, yellow fever can not be arrested by drugs. On the other hand, it is well established that paroxysmal malarial fever may be arrested and cured by bark and its active principle quinia. Yellow fever may be conducted to a successful issue by the attentive and careful physician, but it can not be arrested.

PERIOD OF INCUBATION OF YELLOW FEVER.

The period between the exposure to the "infected atmosphere" and the manifestation of yellow fever is not of fixed duration, but varies with different individuals; some systems resist for long periods the morbific agents, while, on the other hand, healthy individuals coming into an infected city have been attacked within thirty-six hours. A few hours' exposure to the atmosphere of the city in which yellow fever is endemic may be sufficient for the introduction of the poison into the system. This statement is sustained by the following observations:

Case 3.—A stout, healthy young gentleman, of florid complexion, sanguine temperament, and active habits, resided in a healthy locality in Liberty County, Georgia, thirty miles from Savannah. In the month of September, 1854, while the yellow fever was prevailing, he drove in his carriage into the city, and visited the house in which one of his near relatives had died a few days before with well-marked yellow fever accompanied with black vomit. Entering the city at midday, he remained about four hours (just long enough to secure some business papers relating to the estate of his deceased relative), and returned immediately into the country. In the course of one week this stout young man, in the full vigor of health, was seized with yellow fever, and died with black vomit after an illness of four days. After death, the body presented a deep yellow color, and the dependent portions were mottled from the unequal and excessive capillary congestion. The exposure of a few hours to the atmosphere of the city was in this case sufficient for the introduction of the poison. On the other hand, many individuals living in the infected cities, and holding daily intercourse with the sick, do not manifest symptoms of the disease until near the close of the epidemic; while others, equally exposed, pass through many epidemics without even manifesting a sufficient amount of febrile derangement to require medical treatment. This latter remark applies not only to the natives of southern cities, but also to residents of northern latitudes, who remove to those localities where yellow fever prevails after they have attained their full growth. The period of incubation appears to vary in different epidemics, and among different individuals during the same epidemic, and may extend from twenty-four hours to weeks and even months. In this respect yellow fever is allied to those diseases which are supposed to arise from malarial effluvia, and differs from those well-defined contagious diseases in which the period of latency is well-marked and of definite duration.

During the prosecution of my investigations in yellow fever, notwithstanding frequent contact with the sick and dead, and exposure to the exhalations from the bodies of yellow fever subjects and from the black vomit, excretions, and blood and organs subjected to chemic analysis, I have never experienced well-marked symptoms of this disease until the great epidemic of 1878; although at times, when most exposed to such exhalations, I have suffered with slight fever, loss of appetite, and nausea (these symptoms, however, were not of sufficient severity to cause the intermission of my labors); and such observations have led me to the belief that under certain circumstances the poison of yellow fever may pass through the system, producing slight derangement, without inducing the disease itself.

During the prosecution of similar investigations in smallpox, I have in like manner felt the depressing influence of the poison without manifesting well-marked symptoms of this disease; and upon one occasion, after exposure to the smallpox poison in the crowded tents of a Confederate military smallpox hospital, and after performing a protracted *post-mortem* upon the body of a Confederate soldier who had died with confluent smallpox, I suffered with fever, intense pain in the back and head, and injection of the capillaries of the skin. These symptoms disappeared, however, at the end of three days. It was evident that the protective influence of the vaccine virus introduced into my arm twenty-five years before was sufficient to cause or allow the passage of the smallpox poison in large amount through the system, with only a partial and mild manifestation of some of the symptoms usual in those unprotected either by vaccination or by a previous attack of smallpox.

In the case of the yellow fever poison, there was no known state of the system artificially produced, as in the case of the smallpox poison, which would account for the elimination of the poison; although that such an elimination must have taken place was manifest from the peculiar train of symptoms attending prolonged exposure to the exhalations of the sick and dead.

Of the various students numbering over one hundred, and many of them fresh from the country, who have observed cases of yellow fever in my wards in the Charity Hospital and witnessed *post-mortem* examinations in the dead house, and chemic and microscopic investigations in my laboratory during the autumnal months of 1870, 1871, 1872, 1873, 1874 and 1875 in New Orleans, only two were attacked with yellow fever. In none of the years specified did yellow fever prevail as an epidemic in the section of the city in which the Charity Hospital is situated. In only a few instances in 1873, did the disease originate among the patients in the wards, who had not been exposed to the infected localities in the city.

There are many persons in the city of New Orleans, who have nursed hundreds of yellow fever patients, stood over them, rubbed and bathed them, inhaled the atmosphere of sick rooms for months, and even washed and shrouded the dead, without ever having a day's sickness. The late Mr. Maybin, a native of Philadelphia, who was distinguished for his devotion to the poor, sick and suffering, informed me that he had passed through all the great epidemics of New Orleans, for a period of over fifty years, including the great epidemics of 1839, 1843, 1844, 1848, 1853, 1854, 1855, 1859, and 1867, without having even a symptom of the disease.

In 1853, many nurses in the Charity Hospital, when two hundred or more died per week, escaped the fever. In the same year, Mr. Logez, one of the carpenters in the Charity Hospital, worked hard all summer, within a few feet of the dead-house where fifteen or twenty bodies were often lying at once awaiting burial, and emitting a nauseating stench, and did not take the disease. Six other carpenters who assisted him took the disease and died. Some of them made the very coffins in which they were buried. The physicians of the Charity Hospital who made careful and thorough *post-mortem* examinations of the bodies in the months of July and August, when the epidemic was at its height, and the bodies in a state of rapid decomposition and offensive, escaped infection or contagion. Over two thousand deaths from yellow fever occurred in the Charity Hospital during the fatal epidemic of 1853. (History of Yellow Fever in New Orleans, 1853, p. 38.)

In *La Republica* of Buenos Ayres, a statement occurs that during the epidemic of 1871 when, according to this paper 17,084 deaths occurred, 350 gravediggers escaped the fever. The cemeteries are situated on the outskirts of the population. Coffins were exposed for many hours before being interred, from

the press of work. (*Medical Times and Gazette*, August 19, 1871, p. 216.)

According to Dr. Daniel Blair, of British Guiana, in some cases the patients had arrived in this colony and in two weeks died of yellow fever, having been attacked within the first twenty-four hours after arrival. Dr. Blair records the following illustrations:

Miss R. left this colony with her mother and sister in one of Booker Brothers' ships, having been exposed to river influence only the one night previous to departure. All were in good health on embarkation. After being at sea fourteen days they all sickened; Miss R., who had been far advanced in phthisis, died of yellow fever.

Mr. Bramisch had been exposed to the malarial locality of Water Street, at Walmsley and Bowes on Friday. He left town the same day, and sickened with yellow fever on Sunday.

Dr. Reid's exposure and interval between exposure and attack was the same.

Mr. Bolton, of the *Rapid*, was only one night in the malarial district, and within twenty-four hours after proceeding to Sand Hills, was seized with the epidemic.

Thus it would appear that the period of incubation varies, and that some systems can for a longer period throw off the morbific agency; while with others, exposure the most casual and temporary produces immediate effects. A case occurred in the Seamans Hospital, wherein the period of incubation seemed extended to four months being kept latent probably by the phthisis under which the patient was suffering.

Patients previously suffering from intermittent fever, dropsy, iodinism (coryza from iodid of potassium), and ptyalism have had the epidemic disease engrafted thereon; peritonitis and pneumonia failed to exclude the invasion, and the most inveterate lichen tropicus. It has added itself to delirium tremens and lead colic; it has supervened during the flow of the catamenia. Patients under treatment for anemia, and intermittent fever, sarcocele, scald, diabetes and flesh wounds, fractures, rheumatism, erysipelas, ophthalmia, syphilis, strictures, ulcers, eczema, mosquito wounds, whooping cough, and phthisis, have been attacked and often fatally by yellow fever.

When yellow fever became a parasitic disease, the symptoms were considerably modified at first, but the epidemic disease ultimately absorbed all the other symptoms.

In the epidemics observed by Dr. Blair in British Guiana, the invasion sometimes began with malaria of several days duration. Sometimes this formative stage showed itself in diarrhea; in a few cases it began with apoplectic or paralytic symptoms. Sometimes if the treatment was early adopted, or the patient was suffering from another malady, reverberations, repulse and relapse were observed in the first stage, thus abnormally extending its period. About one-half of the normal cases were so sudden and phenomenal in the seizure that the exact hour of the attack could be precisely ascertained. The hours of 6 A.M. and 6 P.M. when, in the latitude of Georgetown the most violent atmospheric disturbances of the day occur, were most favorable to the seizure.

The average duration of an attack of the epidemics of British Guiana, ending in convalescence, estimated from 1,158 cases of the *graver* form, and 428 cases of the *milder* form, was 6.34 days for the former and 5.35 for the latter. The average duration of a fatal attack, estimated from 404 cases, was 7.08 days. In these estimates, the day of attack and the day of death, or of convalescence, are reckoned each one day. Although the maximum and minimum days of duration differed widely from this average, those of the *graver* being 23 and 2, and of the *milder* 13 and 2, and those of the 2,472, yet the vast majority of cases fall in closely with the averages. This coincidence happened always more particularly when the disease was persistent, and the epidemic pulsations most intense. The average, therefore may be assumed as the law of duration, of each class respectively.

According to Dr. Blair, intemperance was occasionally a predisposing cause, by recklessness of exposure; but abstinence, as shown on board the American "teetotal" ships, was no protection. It seemed at the time as if those resident in the infected districts circulated the poison habitually through their systems; that old residents had in an eminent degree the power of eliminating it, and keeping its presence latent—had a tolerance of it; but that newcomers, and particularly those of florid complexions and rigid fiber, were constantly, in reference to the presence of the virus, in a state of tottering equilibrium; so that in them the slightest unfavorable impulse to that balance—the lowering of the vital powers by fatigue, the suppression of any of the preparatory secretions, a shock to either of the nervous centers, or the depressing emotions—were sufficient to excite the latent poisons. (Some Account of the Late Yellow Fever Epidemic of British Guiana, Third Edition, 1852, pp. 60, 61, 69, 70, 72, 74.)

According to Alexander Humboldt, the farm of l'Encero, near Vera Cruz, elevated 3,043 feet above the level of the ocean, is the superior limit of the *vomito*. The Mexican oaks descend no farther than that place, being unable to vegetate in a heat sufficient to develop the germ of yellow fever. Individuals born and brought up at Vera Cruz are not subject to this disease; and it is the same with the inhabitants of Havana, who do not quit their country; but merchants born in the island of Cuba, or who have inhabited it for a great number of years are attacked with the *vomito pireto* when their affairs oblige them to visit this part of Vera Cruz during the months of August and September, when the epidemic is at its height. In the same manner, Spanish Mexicans, natives of Vera Cruz, have been seen to fall victims to the *vomito* at Havana, Jamaica or the United States.

The *vomito* is not regarded as contagious at Vera Cruz. In most countries, the common people consider many diseases as contagious which are of a very different character; but popular opinion in Mexico has never interdicted the stranger not seasoned to the climate from approaching the beds of those attacked by the *vomito*.

The whites and mestizoes who inhabit the interior tableland of Mexico, of which the mean temperature is 60.8 degrees and 62.6 degrees F., and where the thermometer sometimes falls below the freezing point are more liable to contract the *vomito* when they descend from l'Encero to the Plan del Rio, and from there to la Antigua and the port of Vera Cruz, than the Europeans or inhabitants of the United States who come by sea; the latter passing by degrees into the southern latitudes are gradually prepared for the great heats which they experience on landing; but the Spanish Mexicans, on the other hand, change suddenly their climate when in the space of a few hours they are transported from the temperate region to the torrid zone. The mortality is very great, especially

among two classes of men very different in their habits and modes of living; the muleteers (*arrieros*) who are exposed to extraordinary fatigues in descending with their beasts of burden, by tortuous roads like those of St. Gothard, and the recruits destined to complete the garrison of Vera Cruz. Every imaginable care has been bestowed on these unfortunate young men, born on the Mexican tableland at Guanaxuato, Toluca, or Pueblo, for the purpose of preserving them from the deleterious miasmata of the coast, but without success; they have been left for several weeks at Xalapa, to season them gradually to a higher temperature; they have descended on horseback, or by night to Vera Cruz, that they might not be exposed to the sun in crossing the arid plains of Antigua; they have been lodged at Vera Cruz in well-aired apartments; but it has never yet been observed that they were attacked with the yellow fever with less rapidity and violence than the soldiers for whom these precautions had not been taken.

In the season when the *vomito* rages with great violence the shortest stay at Vera Cruz, or in the atmosphere which surrounds the city, is sufficient to communicate the disease to persons not seasoned to the climate.

The inhabitants of the City of Mexico when they propose to sail for Europe, dreading the insalubrity of the coast, generally remain at Xalapa till the moment of the departure of their vessel. They set out on their journey in the cool of the night or cross Vera Cruz in a litter, to embark in the boat which awaits them at the Mole; and yet these precautions are sometimes useless, and it happens that these very persons are the only passengers who sink under the *vomito*, during the first days of the passage. It might be admitted that in this case, the disease has been contracted on board the vessel, which remained in the port of Vera Cruz, and which contained deleterious miasmata; but the celerity of the infection is more incontestably proved, by the frequent examples of the better class of Europeans, dead of the *vomito* though on arriving at the Mole, they may have found litters ready to begin the journey to Perote.

Such facts may be held by some to sustain the doctrine that yellow fever is contagious, under all the zones; while those who hold that it is not communicable by immediate contact with the sick and dead, admit that the atmosphere of Vera Cruz contains putrid emanations, which if breathed for the shortest space of time, introduce disorder into all the vital functions.

The most part of the Europeans newly landed feel during their stay at Vera Cruz the first symptoms of the *vomito*, which is announced by a pain in the lumbar regions, by the yellow covering of the conjunctiva, and by signs of congestion toward the head. In some individuals it only declares itself when they arrive at Xalapa, or in the mountains of La Pileta, in the region of pines and oaks, at from 5,248 to 5,904 feet above the level of the ocean. Those who have long resided at Xalapa, deem themselves able to foretell from the features of the travelers who ascend from the coast to the tableland of the interior, whether without their being sensible of it themselves, they contain within them the germ of the disease. Dejection and fever increase the predisposition of the organs to receive the impression of the miasmata; and these same causes render the commencement of the yellow fever more violent when the patient is imprudently informed of the danger of his situation. In illustration of the preceding statement, Alexander Humboldt cites the following interesting instance:

> A person with whom he was on terms of intimate friendship, during his stay at Mexico, had passed only a very short time at Vera Cruz, on his first voyage from Europe to America. He arrived at Xalapa without feeling any sensation indicative of the dangerous state in which he was immediately to be. "You will have the *vomito* this evening," said an Indian barber, gravely to him while he lathered his face; "the soap dries as fast as I put it on; that is a never-failing sign, and for the twenty years that I have been in the practice of shaving the *chapetons*, who pass through this town on their way to Mexico, out of every five, three have died." This sentence of death made a strong impression on the traveler. It was in vain to represent to the Indian that his calculation was exaggerated, and that a great heat of the skin does not prove this infection; the barber persisted in his prognostic, and in reality the disease declared itself a few hours afterward, and the traveler already on his way to Perote, was obliged to be transported to Xalapa, where he nearly fell a victim to the violence of the *vomito*. (Political Essay on the Kingdom of New Spain, London, 1811, Vol. IV, pp. 170–178.)

In regard to the epidemic of Gibraltar in 1804, Sir W. Pym[3] states that the *fourth* day was generally the time the contagion seemed to require to show itself; and several instances occurred of strangers who were attacked on the second and third day after their landing at Gibraltar. From the fact that persons were seized on the first day of their landing at Gibraltar, while persons who fled from the garrison were taken ill on the coast of Portugal many days after, induced Mr. Amiel to believe that the disease may be excited into action at any time from the first moment of exposure to a period of fifteen or twenty days. The following statement by Wm. Fergusson, in his "Notes and Recollections," would even show that the disease may be developed in less than twenty-four hours after exposure to the infected atmosphere. At Mark's Hill, "it was the duty of the white troops in both forts to take the guard and duties of the dock yards among the marshes below; and so pestiferous was the atmosphere, that it often occurred to a well seasoned soldier mounting the night-guard in perfect health, to be seized with furious delirium while standing sentry, and when carried back to his barracks on Mark's Hill, to expire in all the horrors of the black vomit, within less than thirty-six hours of the first attack."

Drs. Pausit, Bally, and Francois regarded the period of incubation at Barcelona in 1821, as not exceeding twenty-four hours, or three days at the most; Aujula from twenty-four to thirty-six hours, sometimes from two to seven days, and even as late as from thirty to fifty days.[4] According to Dr. Harrison, persons who arrived in New Orleans during an epidemic, from the healthiest region, even by the ocean, are subject to attack on the third to the sixth day after their arrival; and Dr. Merrill[5] states that at the Bay St. Louis in 1820, several persons who arrived while the disease was at its height were attacked in twenty-four hours.

The authority of various other observers, as Lind,

[3] Observations on the bulam fever which has of late prevailed in the West Indies, on the coast of North America, Gibraltar, Cadiz and other parts of Spain, etc. 8. tr., London, 1815, p. 24.

[4] Pausit.—Observations Sur la Fièvre Jaune fales à Cadiz en 1819, etc.

[5] New Orleans Medical and Surgical Journal, March, 1847, p. 569.

Yellow Fever, by R. La Roche-Mer, Vol. I, p. 510.

Dr. D. O. Saunders, of Memphis, placed the incubation period of the fever of 1873, between twenty-four hours and sixteen days, having seen one case where a gentleman who had been absent all summer was attacked in twenty-four hours after his return, and another who was away from the city was attacked in sixteen days after leaving New Orleans. 1874, p. 800.

John Hunter, R. Jackson, Wallace, Riseuno, Moreau de Jennès, Rush, Townsend, Chisholm, Bryson, might be adduced to sustain the proposition already sufficiently illustrated by the authorities quoted, that the period of incubation of yellow fever is of variable duration. From the preceding facts, the following conclusions may be drawn:

1. Yellow fever differs from such contagious diseases as smallpox, measles and scarlet fever, in the variable duration of the period of incubation.

2. The sudden seizure of many cases after a few hours exposure to the infected atmosphere, indicates the existence in the air of a potent and specific poison, which is most probably introduced through the lungs into the blood.

3. The phenomena of yellow fever in those suddenly exposed to the atmosphere of an infected locality can not be referred to any physical changes of the temperature and electrical condition of the surrounding atmosphere, but must be referred to the action of a specific poison.

4. The propagation of yellow fever from the infected atmosphere of an infected vessel in a healthy city; the communication of the yellow fever from person to person; the spread of the disease from an infected point in a city, however large, over extended areas of said city; and the sudden cessation of epidemics of yellow fever by cold sufficient to produce frost and ice. These and similar facts indicate that the poison of yellow fever is a living germ of animal or vegetable nature or origin.

(To be continued.)

CRANIOPLASTIC OPERATIONS.

Thesis: For admission to Chicago Academy of Medicine.

BY CARL BECK, M.D.

CHICAGO.

The purpose of plastic operations is to remedy defects. Cranioplastic operations have, therefore, to remedy defects of the cranium. The cranium is a bony structure, and operations on such are therefore bone-plastic operations and share more or less of the characteristics, difficulties and the fate of such.

Bone-plastic has been studied attentively of late, but osteoplastic on the cranium has not been the subject of very critical research.

Defects of the cranium can be either congenital or acquired. Teratology and pathology enumerate a large number of instances of such congenital defects. From the monster called anencephalus, hemicephalus, down to porencephalus, through all gradations we have mal-development of the cranium, but these extremely high degrees of defects will not easily be the subjects of a plastic. The individuals thus born are doomed to die early, or they are idiots and not worthy of remedy—for such a creature it is better to be dead than alive. But there are defects of the cranium which allow a normal development of the brain. Such are small defects in the bony part, as present in meningo- or encephalocele—small openings in the skull. Such defects are especially concerned in plastic.

A much larger group than the congenital is the acquired. They can be acquired by trauma or disease. This trauma can either be caused by accident or purpose, and the latter furnishes, with the growing number of surgical operations on the skull and brain, the largest amount of defects. Various diseases may destroy the cranium, and not only the size of the defect in a particular case, but the peculiarity of the disease must be taken into consideration.

After thus reviewing the possibilities of defects from the etiologic standpoint, we will divide the defects into:

1. Congenital.
2. Accidental trauma.
3. Surgical.
4. Morbid.
   - (*a*) Tubercular.
   - (*b*) Syphilitic.
   - (*c*) Cancerous or sarcomatous.

I—CONGENITAL DEFECTS.

Osteoplastic operations, would be considered when a small defect allows the development of a hernia cerebri, meningocele, or encephalocele. A defect of this kind might be situated on any place on the cranium; might be quite large; inaccessible; might be very irregular or small, and almost like an opening made by a trephine. Fig. A, which shows such a defect of the skull, is drawn after a specimen of the Musée Dupuytren. The localities where they are most common are the root of the nose, the external and internal angle of the eye, the orbital, nasal and buccal cavities. Furthermore, between the sutures of the cranium. These defects, if not attacked by the surgeon, will never be covered with bone and they form, therefore, one indication for plastic.

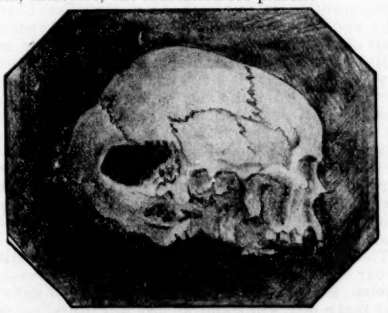


FIG. A.—Defect in skull from encephalocele. (Musée Dupuytren.) Duplay-Rèclus. Tr. de Chirurgie.

II—ACCIDENTAL.

All accidents by which complicated comminutive fractures of the skull occur, whereby a part of the bony structure of the skull is lost or is broken out of the continuity, give rise to such a defect. It is not very common that they heal over without being attacked in some way or other by the surgeon; that is, usually, the surgeon removes loose particles, evens edges and corners so as to make the bony wound smooth, so that they would have to be grouped under the third head.

III—SURGICAL.

Defects produced by the surgeon are such as mentioned above. They are very common. All procedures on the skull, whereby parts have been removed, will have, if plastic is not done, a defect. Every opening of the integral cranium for the purpose of dura- or brain-operations or ligature of vessels, if not repaired by plastic leaves a defect.

IV—MORBID.

Tubercular defects are not very common and not

likely to become the subject of a surgical operation. Syphilitic and cancerous defects might be the subjects of quite an extensive plastic.

We now come to the physiology of the parts concerned. The cranium is a bony structure, very much depending on its periosteum. It is not like all bones, having a periosteal covering not only on its outer side, but also on its inner side, for the dura mater certainly acts as a periosteum. We have many proofs of such action. (*Ollier Traité, Exp. et Clin. de la Regeneration des os*, etc., Vol. I, page 80,) says: "The dura mater is a membrane about which the authors have not agreed. Some want to give it the same quality as the periosteum proper, making an internal periosteum of the cranium of it. Others regard it as having no part in the ossification. The study of its development shows, however, that it is united with the bones of the cranium in a very intimate way during the embryonic stage. Furthermore, it is even the seat of pathologic ossifications. In order to decide this question, we proceeded with this membrane in the same way as with the periosteum and have transplanted the same. On young rabbits, we have removed a part of the dura mater of the convexity immediately after death, and we have transplanted this under the skin of the hip. We have obtained bony tissue, mostly in little disseminated granules, sometimes in a mass of the size of a kernel of corn.

This one experimental fact, and another one which I will mention in the report of my cases (Case Chensik), and furthermore, the fact that we find hyperostosis of the dura mater during pregnancy, the so-called hyperostosis or osteophytæ gravidarum, prove it to evidence that the dura mater is nothing but a periosteum. From this fact we draw the conclusion that in doing osteoplastic operations on the cranium we have no difference from other osteoplastic operations, but the fact that it is a combination of a very brittle internal bone-plate, tabula vitrea—and a very hard, somewhat elastic external plate with great individual differences and varieties in circulation, thickness and form, give to this bone an exceptional position.

The question whether we can transfer the results of our experimental work on animals directly to the human, is a very important one. It is a well-known fact that a dog will stand almost any operation on the intestine and survive, while in the human being it shows a different refraction. And so it is with the experiment on the cranium and brain. The cranium of the human especially, is so different from that of other animals, that our experiments, as to technique and peculiarities of healing, can not be immediately transferred nor compared to the human. Some plastic operations (autoplastic) especially, will be much easier on the human than on the animal, while others (heteroplastic) will be just the reverse. It is, therefore, hard to decide about the value of some devices and methods which have been used in experiments on dogs, and not yet been employed on patients.

THE METHODS OF PLASTIC.

Plastic has different methods. The ideal of all plastic is to make it as much as is possible, similar to nature, as we are never able to make it equal to nature, even with our best skill and will. To replace a defect or bone by bone again, of similar size and shape, will therefore be the ideal. This may be accomplished in different ways. Either the bone that has been removed may be replaced right away, with the smallest possible loss of substance, or bone from the same individual, from different parts of his body, may be taken to cover the loss. This procedure is called autoplastic. All the rest of the procedures can be comprised under the name of heteroplastic, and the value of a differentiation between the material—whether from a living subject or whether a dead body—seems to me of little importance, inasmuch as it comes more and more to light that even the transplanted portions from living bodies are not dealt with differently by nature than dead bodies, in the healing process, inasmuch as they all are encysted. It is then only a question, which of those bodies is preferable, and the one that is encysted the quickest and, after encysted, fulfills the purpose of protection the best, is best for transplantation.

We will now go more into the details of these methods.

A—AUTOPLASTY.

1. Temporary Resection.—This would be the simplest method of covering a defect, but it is only applicable where we produce the defect temporarily; therefore, in operations for processes in the dura, the vessels, or the brain, where the cranium is healthy. There

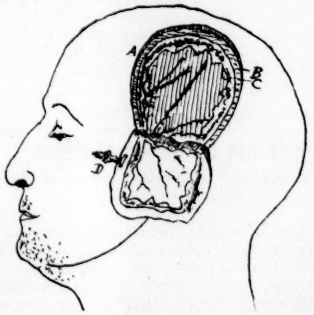


FIG. B.—Temporary resection (Wagner, 1889). A. Incision of the soft parts. B. Space between bony and soft parts. C. Section of bone with both plates. (Chipault.) D. Franck's forceps.

are different methods of temporary resection. One of the first was Wagner's method of skin periosteum bone-flap, in the form of a door of oval shape, with the hinge. It was produced by chisel and mallet.

Usually by this procedure with chisel and mallet (Fig. B.) a great deal of substance of bone is lost, so that the space between the flap and integral bone is left to be filled by cicatrix or a newly formed bone. Modifications of this method are by Müller, Lowenstein, Poirier, Salzer, Bruns, Toison and Chipault. The accompanying figures (Fig C, c_1c_2) explain the more important modifications. Of all the methods that have been described, Chipault's seems to be the most appropriate, inasmuch as it does away with one disadvantage—the lack of apposition of flap and integral bone. Without knowledge of Chipault's method, I have used in a special case, a similar procedure for opening of the skull in the case of a brain tumor but I found that the flap, even then, has been moved so violently by the increased pulsation of the dura that it interfered with the healing, and though the periosteum had been very carefully sutured, two weeks after the operation the flap was

as loose as if it had not been in contact with the bone at all. In order to prevent this, I have studied this question and would suggest a modification of the temporary resection, which I will describe in detail as follows (*vide Centralbl. f. Chir.*, 94, No. 44):

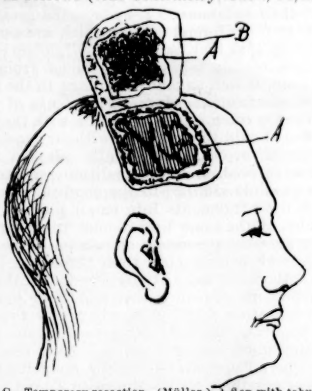


FIG. C.—Temporary resection. (Müller.) A flap with tabula vit. and diploe. B. Soft tissues. The remaining inner table being removed with rongeur.

A more or less rectangular incision with a pedicle in the direction of the larger vessels, is made into the skin and periosteum. The bone is then chiseled in the direction towards the outside, obliquely, through the thickness of the cranium, in the same manner as it is done for Müller-Koënig's osteoplastic, in three directions until the diploë is reached. The edges of the bone, which have been chiseled, are tilted up in

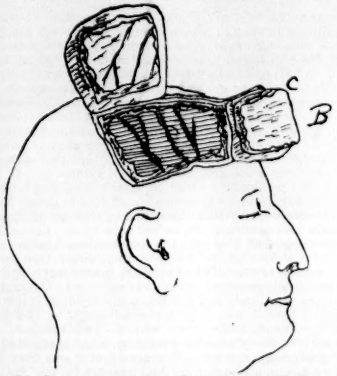


FIG. C 1.—Temporary resection. (Bramann.) Double flap to enlarge the opening. Flap B must be replaced first on account of its oblique inner border c. (Chipault.)

the manner shown by the accompanying drawing. (Fig. D, D.) In the corners it must be split diagonally a little. When the diploë is reached, a small opening is made by the chisel and hammer down to the dura, and with a narrow gouge a furrow cut out all around, so that the flap is now movable from three sides. This maneuver, complicated as it may appear, is quickly accomplished, if done with some skill. The fourth side of the flap can be simply broken, if the skull is not very thick, or a chain saw or fret saw may be introduced and the bone sawed through. This procedure has several advantages:

1. It prevents pulsation of the flap.
2. There is, as the transverse cut shows, hardly any

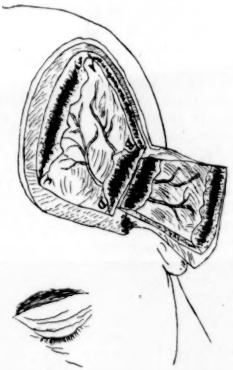


FIG. C 2.—Temporary resection. (Chipault.) On both sides of the replaced osteoplastic flap will remain an open space, A B, C D.

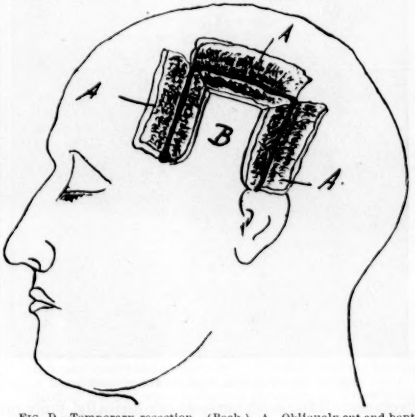
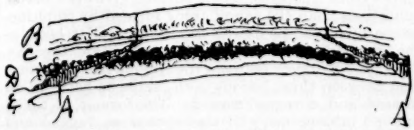


FIG. D.—Temporary resection. (Beck.) A. Obliquely cut and bent up borders containing scalp and skull. B. Flap before turned up.



Transverse section of flap. AA, loss of bone substance; B, scalp; C, periost.; D, skull; E, dura.

loss of substance, and therefore the healing, as in the case of a fractured bone, without much cicatrix, is most probable.

3. The chiseling and gouging is done much quicker, and with much more simple instruments than if the trephine is used and saws introduced by forceps and

probes, as in the methods of Toison and Chipault.

Thus far, I have been able to do this method only on cadavers and dogs, but I will give it a trial in the next case of brain operation. In the dog it is a very hard procedure, on account of the perfect impossibility of chiseling obliquely down to the diploë, the bone of the dog being so irregular in its thickness. In this respect the human skull has a great advantage, especially over the convexity, where these temporary resections are usually performed. Temporary resection will be the operation of choice in the future because, once started, the opening can be made as large as needed and without any loss of cranial substance, as in the case of trephining. Two or three such flaps can be formed, and half of the skull—or more even—laid bare if necessary.

2. Implantation of Cranial Fragments.—This method comprises trephining with replacing the bone plates, as well as the re-implantation of loose fragments in

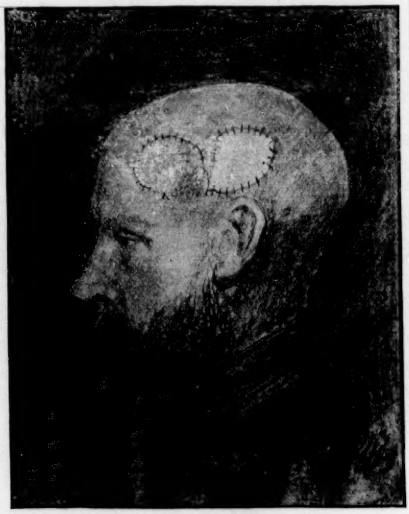


FIG. E.—Bert. Bereman, eight days after operation.

fractures. They both have, physiologically, more or less the same conditions of wound healing. Fragments from fractures, *ceteris paribus*, give even better conditions than the round chips formed by trephine, or the square chips by the chisel and mallet, because the fracture causes a simple breach, while the saw destroys substance between the fragments. The relation between these lesions is the same as between an incised and a ragged wound. The former, if taken under a microscope, will also appear as ragged and lacerated, but the necrosis between the two borders will be much smaller and the substance thrown off much less; the wound healing process, therefore, more simple than in the latter. From this standpoint, I would prefer a chisel and bone-cutting to trephining.

The plastic of this group is done in the following way: The bone is replaced from where it has been taken, more or less unchanged. In many cases, in fact, these bone fragments, though without periosteum have healed in, and there are numerous observations where they have healed in, not in the manner of foreign bodies—that is, encysted—but with perfect integrity of their substance. They have the great advantage over other foreign bodies which are used in their place, in that they have perfect diploëtic circulation which readily takes in the blood from the neighborhood, as well as many openings in the table for new vessels from the dura. Fragments of fractures have very often some connection with the periosteum, and should therefore not without consideration be torn off or out, but carefully adapted, their periosteum sutured, and the condition rendered as much as possible similar to the condition before. To cut the little fragments into small pieces—little chips—may, at the same time render the nutrition easier, because the plasmatic circulation might get harder through a large chip than through a small one but on the other hand, it might endanger the life of that little bone chip altogether, and the chip might cause an irritation which not only causes this one chip to suppurate out, but also prevents the others from taking good strong hold, as I have observed in a case where I used all bone chips, replacing them as nicely as possible; they suppurated all out.

3. Transplantation of Bone from other Parts of the Body.—There are two possibilities again: *a*, transplantation from the neighborhood; *b*, from a distance.

a, Transplantation from the neighborhood, or the so-called autoplasty by the slide of Koënig's which gives so far, splendid results. The method is best described by the following history of a case, whose picture, before and after the operation shows the result:

Bert Bereman; painter; Cook County Hospital, February, 1894. Eighteen years ago this man was struck on his forehead by a rotating crank, and a piece of his skull was chipped out. He was taken to a hospital and a piece of bone, one and one-half inches in diameter removed, and the defect simply left to heal by granulation. A cicatrix which was closely adherent to the dura showing marked depression was the result of this operation. From that time on, the patient had attacks of epilepsy—as frequent as one hundred in a day—and lately so many that he sought refuge in the hospital for surgical cure. The condition before the operation is shown by the photograph. (Fig. D. Photo 3). It was thought that the cicatrix adhering to the dura, and possibly to the brain substance, was the cause of this epilepsy and I decided, therefore, to relieve this scar by dissecting it down to the brain and covering the defect with bone. The scarred tissue was excised at first with the surrounding healthy skin, to the extent shown by the white semi-circular line on the picture. In the center of the free dura mater was a splinter of bone, vertically inserted, which was removed. The incision into the dura was made and the brain underneath inspected. It was found that it was in no place adherent to the dura; that the thin arachnoidæ were whitish and opaque. The blood vessels of the pia mater were somewhat congested but no other pathologic change. The dura mater was therefore, sutured up again, and a flap formed exactly in the manner of Müller-Koënig's suggestion of scalp, periosteum, bone, which was slipped over the defect, implanted carefully, and carefully adapted. A pear-shaped defect with bare diploë was on the place from where the flap was taken. (See Fig. E.) This defect was covered by a free flap which was dissected from the leg of the patient and quickly sutured.

The patient had no attack of epilepsy for a number of days. Müller-Koënig's flap healed by primary union, and so did the free flap, except in its central part, where it sloughed out in the following manner: The borders of the free flap to about one-quarter of an inch, were rose-colored on the second and third day; the central part somewhat paler, but during the following three or four days this central part acquired a pink color. The superficial layers of epidermis

were thrown up by exhalation and a wine-colored fluid formed vesicles; necrosis of the epidermis. While the borders acquired a more and more healthy appearance, the central part grew more and more cyanotic, and after about two weeks, it had all the appearance of necrotic tissue to about one-quarter of the thickness of the flap.

To resume, I would say that the central part of the free flap sloughed out, but not to its whole thickness. Thiersch grafts were used to cover the granulating flap. The epileptic seizures recurred, and the patient left the hospital only slightly improved. The bone flap has grown firmly on its place, and the original depression and defect are filled out with bone.

b. Transplantation from a distance. Such transplantation can be either that of bone, periosteum or cartilage.

Periosteum and bone have been taken from the tibia and transplanted with success. The use of cartilage has been suggested by Sacchi, but so far only done on dogs.

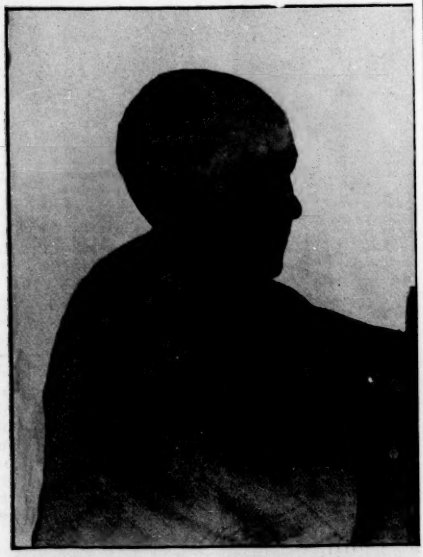


PHOTO. 1.—Josie Chensik, 30 years old. Hekrosis cranii (granuloma supra dur. lust?) defectus cranii 5x4. Before plastic op.

In the Royal Academy of Genoa, on April 23, 1894, Sacchi reported that he had used cartilage bone plates from the epiphysis of a large young dog, into the defect which had been caused by trephination. The plate is implanted two days after the operation, so that the bony part lies on the dura, while the cartilage is underneath the scalp. In three cases in which this procedure has been used, it held in without fail and a complete firm covering accomplished.

4. Heteroplasty.—That means the transplantation of substance from outside of the subject that is operated upon. This substance might be from a living subject (which has been denoted as heterobioplastic), or it might be an inorganic body (heteronekroplastic).

From the experiments and conclusions of later date (Barth and others) we can judge that there is not much difference whether we transplant from a living subject or an inorganic substance. Both are encysted, and if they heal in aseptically, the only difference that can be noticed is, that the organic from the living subject is encysted with much more difficulty than the inorganic. The reason is very simple. The organic substance has to undergo great changes of nekrobiosis while it is implanted, and it is a much more complicated pathologic process to carry away decaying substance, to assimilate living substance of a different composition and histologic texture, than to surround with a network of proliferating cells an entirely unchangeable foreign body.

The experiments which have been made to ascertain the possibility of healing, appropriate for living substance from a different species into the human, are manifold. During the period of aseptic surgery, bone plates especially have been used to cover defects. McEwen has taken the parietal bone with the center of ossification and periosteum of a six-weeks-old dog to cover a defect of the skull. Ricard and Schmitt, have repeated this experiment. The bone plates of a goose's skull have been used by Jacksch and Kapper to cover defects with, they say, good results. But the instances are too few and besides the cases could not be analyzed afterward, to refute the objection that these plates have been disorganized, re-absorbed, and new bone, calcareous deposits have taken place on the previous defect. Chipault questions the possibility of implanting a living heterobioplastic graft and, I would say, rightfully. The very instructive history of the Case Chensik will prove the impossibility to graft a large living substance;—if we can say *living* for a substance that has been taken away from the organism; we might rather call it organic:

Mrs. Josie Chensik; 30 years old; employed in housework; German; widow; has had one healthy child. Husband, as far as she knows, had been healthy. Up to July, 1883, she enjoyed good health. In July, she noticed a swelling on the right side of her head, which grew considerably and finally broke, discharging a large amount of pus. During the same time an eruption on the skin set in, which disappeared shortly afterward leaving no marks. The swelling caused no pain. The opening where the swelling broke enlarged to the size of a 50-cent piece, leaving the bone bare. The neighborhood of that bare place was discolored, and shortly afterward two other places of the same size had sloughed, so that when I first saw her at the Charity Hospital December, 1893, I noticed three ulcerations on the right side of the parietal region, all of the same size. The skin around them discolored, the bone lying bare, and black from use of bichlorid washes. The bone was apparently necrotic, perforated by a hundred little holes of pin-head size, through which came pus of a very disagreeable odor. This was her condition, and made the patient very offensive, nobody being able to bear her presence. In every other respect she was healthy. There was no trace of syphilis; no tuberculosis in her family. On January 23, she was taken to the Post-Graduate Medical Hospital. Temperature 99.2; pulse 102; the wound discharging considerably; strong odor.

On January 26, operated; ether narcosis. The assistant was Dr. Marie White. The head prepared as usual for brain operations. The scalp, as far as it was discolored, removed, together with the periosteum. The bone underneath looked yellowish white; apparently necrotic. After chiseling away and gouging away the necrotic bone, which was of different thickness and arroded inside, a tumor of the appearance of a granuloma presented itself, extending underneath the necrotic bone in ante-posterior direction about four inches; thick in the center and tapering toward all sides. This could be easily peeled off from the underlying dura, except in its central part, where it was quite coherent with the same so that a part of the thickness of the dura had to be removed together with it. However, it did not go through the whole thickness of the dura mater. The bone was gouged away beyond the borders of this, until it was bleeding freely, which symptom showed that it was living bone. There was no demarkation of living and necrotic bone visible. After

these maneuvers, the defect in the scalp measured five and one-half inches by four inches; the bone defect, about one-half inch smaller. The dura mater showed marked pulsation and threatened at times to break through on the thinned portion. The wound was dressed with iodoform gauze, and the patient put to bed. Operation lasted two hours.

Remarks.—From the appearance of the thickened bone and that granulomatous mass, I was inclined to believe that I had to deal with a syphilitic process, but the microscopic examination left me in doubt. The specimen showed a large amount of spindle cells and new embryonic cells, and even for the well educated eye of a microscopist it would be hard to decide whether the specimen is spindle-celled sarcoma or granuloma. Clinically, the case seemed a syphilitic process; microscopic examination indicated sarcoma. The decursus for the next twelve days, was that of a normal wound healing. Healthy granulation covered the dura and the patient was doing well. Daily dressing. The question arose, how to cover this large defect. The picture which was taken about this time, shows the sloughs that remained after the use of Esmarch's bandage to save blood. (Photo 1).

On the thirteenth day, a second operation was performed,

PHOTO. 2.

and an attempt was made to cover the defect by the method of Müller-Koënig's scalp periosteum bone flap. A large skin flap was formed, periosteum incised, and with the chisel an attempt was made to separate the upper table to the extent of the defect, but after hard work of an hour and a half it was seen that this attempt was fruitless, the bone being as brittle as glass and falling off the periosteum; the bone not of the same condition as a healthy bone through the whole scalp; it seemed porous (hyperplastic ostitis). The flap was sutured therefore on its old place again, and the patient put to bed. The healing was by primary union. Again two weeks passed, and the attempt was made to cover the defect by heteroplasty. A dog's skull was shaved and aseptically prepared. Scalp, periosteum and bone flap, to the size of the defect were removed, but when the trial was made to place the same into the defect—whose granulations were thoroughly scraped—it was seen that the very uneven inner surface of the dog's skull would bring about a very dangerous irritation of the dura and the experiment was abandoned. Two days afterward another attempt was made. At the suggestion of one of my friends, I tried a more even surface; the same being given by the inside of the ribs of a very young dog. A flap, consisting of skin, muscles, ribs (cartilaginous portion), which were very close together was dissected out, the pleura removed, the dura mater of the patient thoroughly scraped, and a fresh flap of the dog, with the raw surface of the perichondrium of the ribs implanted, and the perfectly approximated borders sutured together. No rise in temperature consequent upon the operation, but on the third day, a very offensive odor indicated that the flap had become partly necrotic, and though some portions of the same seemed to indicate a close coherence and some vitality—bleeding when removed—I was obliged to abandon this experiment, to remove the flap.

The patient, though better, left the hospital on the forty-third day, the defect being protected by a firm dressing, but shortly afterward she returned again, being afraid to do the slightest work from fear of perforating the thin membrane covering her brain. Nothing seemed to remain to be done but to cover the granulomatus dura with Thiersch's grafts, giving to it at least a covering of skin. It had to be scraped again, and the Thiersch grafts took wonderfully. For four

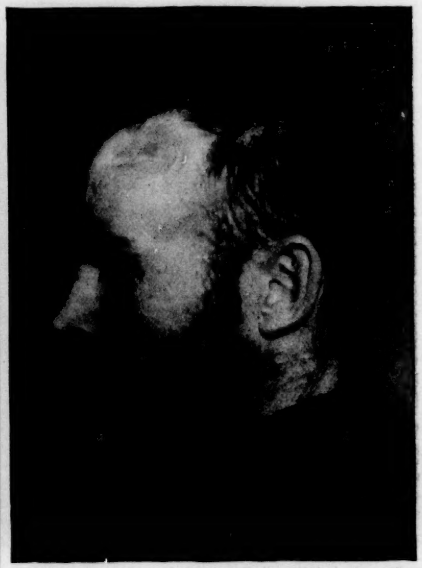


PHOTO. 3.—Mr. Bert Bereman. Epilepsia traumatica, typ. irreg. Defect. cranii indent. trepanatis taris. Plastic op., (Müller, Koenig, Wagner) with plastic of a large free flap upon denuded surface.

weeks the patient remained in the hospital, after which she returned home. By so often scraping the dura, as we did, this membrane seemed to acquire such a thickness that it seemed to me to give more protection against insult than ever before. The patient came at regular intervals to my office, giving me the chance of watching the remarkable process of regeneration of bone between the Thiersch grafts and the dura. Each graft looked like a fish scale, and that it was not retracted, connective and hardened tissue which gave this firmness, was shown by an incision in two places within the boundaries of the previous defect where I could remove two particles of bone which had newly formed. These little scales of bone closed together and at present the defect is covered to two-thirds of its extent with true bone. There is yet some movability between these plates, but gradually less and less, and the bone is getting unevenly thicker, too, as can be seen on the photograph which gives the final result. (Photo 2).

Resumé.—We had to deal here with a post-operative defect of the scalp, which had closed by reproduction of bone over the dura mater, which has acted here as true periosteum. This repair of bone might be due to that irritation of the dura which has been caused by the frequent scraping of the same.

a. The only possible, but, as it seems for larger grafts, imaginary change of such grafts seems to be the hypothetical possibility to engage circulation through preëxisting channels and use the preëxisting bone structure for protection. But rarely such a circulation in an efficient manner would be established, and decay of even such a tissue as bone, that does not require very much nutrition, would take place and it would be exfoliated, if not re-absorbed. I would therefore, reject, *a priori*, the use of any animal grafts for covering of bone defects.

b. A transition from the animal graft to the entirely inorganic, is the graft of decalcified bone. Kümmel has used such decalcified bone, the preparation of which for this purpose is well known (1891). The very extensive, very careful researches of Dr. Senn about the use of decalcified bone plates and decalcified chips as filling material for cavities of bone, would suggest this material for plastic processes on the skull if they would not share, more or less, the disadvantage of the previous material—the animal grafts. Decalcified bone is, in some way, a substance that can be re-absorbed. It may leave particles which are furnished with new circulatory vessels and therefore encysted. They might become the seat of calcareous deposits but they might be absorbed entirely, and they might act, by decay, as irritating material.

c. The oldest methods, that of transplanting entirely inorganic metallic plates, have been used in some cases on a human. With best results has been used a material that has been recommended by Fraenkel in 1890, and since that time used by Eisensberg, Hinterstoisser, Berger and Potempski. That is the celluloid plate. But inasmuch as this celluloid plate in some cases has been exfoliated or had to be removed on account of accumulation of pus underneath, and inasmuch as it was rather irksome to form and cut a plate exactly corresponding to the defect, it seemed to me worth while to go into some detailed experiments in this direction, the results of which I will now communicate.

In No. 9 of the *Centralblatt für Chirurgie*, Martin of Kölm, has reported some experiments of filling cavities of bone with dead material. He used plaster-of-paris and gutta-percha for filling of bones. I have, according to his experiments, used these two materials and some others to fill out defects of the cranium.

Experiment 1.—Plaster-of-paris powder which has been exposed to dry heat in a test tube was kept ready. At first a plate of about half an inch square, on a dog's parietal bone, was chiseled out. This defect was filled with plaster-of-paris, which soon formed, with that slight moisture of the transudation from the defect, a very hard cover which not only filled out the defect perfectly, but also was immovable from the first start, so that when the periosteum had healed over it, it looked almost as normal as before. There was no reaction of infiltration in the neighborhood of this defect. The experiment was made the end of March, 1894.

Experiment 2.—A dog was operated on in this manner: A one-inch square defect in his parietal bone was chiseled out. Gutta-percha plate, as it is used by dentists, was heated in a watch crystal and pressed in, filling out the defect in every pore of the bone, the periosteum drawn over it and the wound sutured. Three weeks afterward, the dog was killed and the following was found: The dura mater on the inside did not show any difference. When drawn off the bone it was found that the plate of gutta-percha had a smooth surface covered with very fine membrane of connective tissue, through which the color of the gutta-percha was transparent. From the outside through the skin, the place could hardly be felt where the gutta-percha was implanted. Encysting structure of fresh connective tissue seemed to have formed between the periosteum and the plate, the result of the implantation or filling being as satisfactory as possible. The plate had been made aseptic by heating before use.

Experiment 3.—A dog operated in the same manner as the first one; an accident produced a heavy hemorrhage from the sinus longitudinalis, which seemed to be uncontrollable. The dog had lost considerable blood, when I employed the filling of plaster-of-paris, which formed, with the blood, a crust that hardened, and checked the hemorrhage in this way. The periosteum was drawn over and the dog, which seemed to the spectators, almost dead when taken off the operating table, rallied wonderfully and is still living. The plaster-of-paris healed in five weeks after the operation.

Experiment 4.—A dog operated in the same manner as the second one; a large defect of an inch and a half square produced and filled by gutta-percha plate. The result is union, the plate encysted and healed; the dog still living. Details since the operation, same as in Experiment 3.

Experiment 5.—Large dog operated in the same manner as Experiment 3, the defect filled out with sealing wax; primary union. The sealing wax encysted; the dog still living.

From these few experiments which gave so uniformly good results, I am very much encouraged to use the materials just mentioned—plaster-of-paris, gutta-percha, sealing wax, celloidin—for plastic purposes in the human in future. They have the advantage that they can be made perfectly aseptic, can be easily procured and always ready, can fill out the defect perfectly and without leakage, and give strong enough protection. The indications in regard to material and method of plastic on cranium, I would formulate in the following manner:

a. Autoplastic is to be used preferably in all possible cases. There should be removed as little as possible of the cranium, and temporary resection in the most efficient way be preferred to any other proceeding.

b. In case of the impossibility of autoplasty, heteroplasty with gutta-percha or plaster-of-paris might be used to great advantage.

c. In rare cases, bone is formed from the dura mater, but we should not rely on such occasional possibility.

Woodman, Spare that Tree.—The Forestry Association of Wisconsin has taken steps to actively push their bill to save the Wisconsin forests. The proposed bill provides for the withdrawal of all forest lands from sale, and will place certain restrictions on cutting timber.

HYDROPS ARTICULORUM INTERMITTENS—REPORT OF A CASE.

Read before the Shelby County (Ind.) Medical Society, Oct. 8, 1894.

BY SAMUEL KENNEDY, PH.G., M.D.
SHELBYVILLE, IND.

I desire to report to this Society a case of hydrops articulorum intermittens. It is a rare disease, as but thirty-three cases previous to this one have been reported, and of these but three were in America. Thus it will be seen that this is the fourth case so far reported in this country and the thirty-fourth on record. The fact of its great rarity makes it all the more interesting, and consequently I have watched this case for many months with intense interest. It is also interesting from the fact that it had been seen by several physicians and invariably pronounced rheumatism. The usual remedies, such as the salicylates, wine of colchicum and other antirheumatics, had been administered, but wholly without beneficial results.

After obtaining a detailed description of the case, and making a careful examination, I concluded that it was at least *not* rheumatism. I was for some time at a loss for a diagnosis, but immediately began to look up the literature on this class of diseases, and at last concluded that it could be nothing but intermittent dropsy of the knee-joint. The symptoms in all the cases so far reported are so remarkably uniform that it precludes the possibility of a mistake in diagnosis to one who has become familiar with them.

Excellent articles appear upon this subject in the "Reference Handbook of Medical Sciences," Supplement, page 484, by William Barnes, and one in the *Medical Record* of June 16, 1888, page 657, by A. H. Fridenberg, of New York. Dr. Fridenberg reports two cases and Dr. Barnes one. These with the case I now report, are the *only ones* reported in this country.

Dr. Barnes says: "There is a remarkable uniformity as regards the symptoms in all the cases, they forming a clinical picture so characteristic and typical as to leave no doubt of the diagnosis in any well developed case. The patient notices a slight swelling in one of the larger joints, usually the knee, and perhaps has his attention drawn to it by a feeling of tension or of discomfort, uneasiness, insecurity, or wabbling in the affected part. This rapidly increases, so that usually, in from twenty-four to thirty-six hours the joint is so swollen as to seriously interfere with, if not to entirely inhibit, the normal functions. In a short time, usually a day or two, the swelling begins to subside and in from twenty-four to thirty-six hours more it is entirely gone, leaving the joint to all appearance in as perfect and healthy a condition as before. After an interval of perfect freedom, the swelling again appears and the same phenomena are repeated, and so on for an indefinite period of time. There are no premonitory symptoms or signs indicative of the disturbance. The patient may be and usually is in his customary good or bad health as the case may be. During the attack there are in most cases no signs of constitutional disturbance; the normal functions of the body remain undisturbed. In two cases, those of Bruns and Pletzer, there was a slight rise in the temperature during the initial attack, but not afterward, while Perrin reports a case in which each attack was preceded by slight chills, followed by slight fever ending in perspiration. Simultaneously with this there was a contraction of all the flexors of the upper extremity, also a painful prickling in all the joints of the same limb. A few hours later the swelling began, and with it the above phenomena gradually disappeared."

Dr. Fridenberg says: "The question as to the nature of this interesting disorder can only be answered in a general manner. We need not hesitate to look upon it as a neurosis of vasomotor origin. But we shall be at a loss to define its exact pathology, and even an approximate idea of the seat of lesion can only be a matter of conjecture, not only on account of the imperfect state of our knowledge of the vasomotor origin and distribution, but because no case has so far reached an autopsy. This much we are justified in concluding: Knee-joint swellings are of vasomotor origin. They must be produced by serous exudation from the capillaries of the synovial membrane. In the absence of any permanent disability or injury to the joint or involvement of the deeper structures, we may assume a non-inflammatory change in the vascular blood-pressure and consequent dilatation of the arterioles, due either to stimulation of the dilating or paralysis of the contracting vasomotor nerve-fibers in the vessel walls. As the vasomotor contraction or tones of the arterioles is the more constant and uniform, this latter is probably interfered with or inhibited. Thus dilatation of the capillaries persists, permitting active transudation. When the lost influence of the nerve function is reëstablished, the vessels resume their normal tones, and the equilibrium between secretion and reabsorption is readjusted. The excess of fluid is absorbed as rapidly as produced. This exudation is not of an inflammatory nature. The pain and disability are due to a rapid mechanical distension of the capsule only. It is therefore a passive dropsy, and its transitory character a clinical reflection of a similar process in the nerve centers.

"We can hardly picture to ourselves pathologic changes in the central nervous system of a transitory nature, otherwise than as the result of a disturbance of the vascular supply of the area involved, leading to exudation, edema, and compression of the surrounding nerve tissue. Vasomotor disturbances are characterized by rapid changes in the caliber of vessels, thus favoring local congestions or ischemias. These central changes must be supposed to subside spontaneously, or be in some manner checked, before developing sufficiently to constitute a permanent lesion.

"Can such central disturbances produce joint swellings? When we consider the intimate connection of arthropathies with certain forms of organic spinal disease, with which we have become familiar through Charcot, Weir-Mitchell, Esmarch, Shaffer and Gibney we need not doubt the occurrence of temporary joint disease as a possible consequence of transitory central disturbances. Long before Charcot's writings, Dr. J. K. Mitchell, of Philadelphia, cured a persistent case of subacute 'rheumatic' synovitis in a woman with an angular curvature, after failure of all the usual remedies, by treatment for spinal inflammation. He subsequently treated three similar cases with the same success. He concluded to regard rheumatism as a spinal neurosis.

My case of this interesting and rare affection was met with in Mr. James B., a day laborer of this city. He is an American, having been born and raised in Indiana, and 33

years of age. I was first called to his house upon Sept. 5, 1892, the person (his wife) coming after me stating that he had a "bad case of rheumatism." Upon catechising both the patient and his wife, I elicited the following history: About four years previously he suffered his first attack in left knee, but not in a very severe form. He recovered entirely in four or five days, but has been having similar attacks every twenty-four days since. He said each attack would last from three to five days, the knee become swollen and very painful. He has always had good health with the exception of this trouble. I have now seen him have twenty-five attacks since the first one. The left knee becomes very much swollen and edematous and he suffers excruciating pain. Upon each and every examination I have found fluid in the joint by fluctuations and a floating patella. During three days of each attack he is compelled to lie in bed, and every movement of the knee causes an exacerbation of pain. The effusion is intra-capsular. Each attack now lasts exactly five days, being worst on the third day and gradually subsiding by the fifth. He has a similar attack just twenty-four days from the last day of the previous attack, and they now recur regularly every twenty-four days. During the twenty-four days' intermission he is absolutely free from any trouble with the knee and attends to his work of ditching regularly, except during his attacks.

During the time I have had charge of the case he has had no trouble with any joint except the one mentioned. He can foretell the approach of an attack to the day and almost to the hour, but he says it is by means of sensations that are impossible to describe.

Regarding treatment, I might say he has taken quinia, iron, strychnia, cod-liver oil, ergotin, carbolic acid, electricity, sodium salicylate, sulphur baths and other remedies too numerous to mention, but all with no apparent benefit. Soon after making my diagnosis, I informed the patient of the nature of the affection, and that it would probably take several years to cure him, if at all, and by this means I have been able to keep the case under close surveillance. So far as I am able to learn, there is no trace of syphilis in this case.

In closing this report, I desire to say that I shall try and keep the case under observation and report to you any progress, if any is noted.

79 East Franklin Street.

A CONTRIBUTION TO THE KNOWLEDGE OF BACTERIOLOGIC CHEMISTRY.

Read in the Section on Materia Medica and Pharmacy, at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

BY W. T. WENZELL, M.D.

SAN FRANCISCO, CAL.

In the year 1865 a German chemist named Marquardt made the discovery that during the putrefaction of animal matter, a substance was formed which bore a close resemblance to an organic base or alkaloid known to reside in the leaves of the spotted hemlock (*conium maculatum*) known by the name of coniine.

Schwanert, found very soon after, while pursuing a similar investigation of the intestines, liver and spleen of a child who had died suddenly, an organic base which he separated by the Stas-Otto process, and also by a similar search in the human cadaver, a sufficient amount of the alkaloid to enable him to determine its nature. He found that it possessed strongly basic properties, that it blued reddened litmus paper, that it was neutralized by muriatic acid, and that it was precipitated by alkaloidal reagents such as chlorid of platinum, chlorid of gold, iodo-iodid of potassium, phospho-molybdic acid, etc.

To these organic bases Marquardt gave the name septicines, the name indicating their source, being derived from the Greek, "septicos," the literal meaning of the word being to make putrid. In 1869, Bergmann and Dragendorff conjointly confirmed the discovery of Marquardt, but also announced the existence of a second alkaloid in putrid flesh, which was not volatile as the alkaloid first discovered by Marquardt, but was a solid substance crystallizing in the form of needle-shaped crystals. It also responded to the usual properties and tests for organic bases, and physiologic tests instituted with it demonstrated a decided mydriatic effect on the eye, and when introduced into the circulation an increase in the action of the heart was observed, and also a cessation of the peristaltic action of the bowels was noted.

In 1869 two cases of suspected poisoning occurred in Italy, where chemic experts claimed to have found morphin in the body of a lady and delphinin in that of a man. The authorities not being altogether satisfied with the results of the analysis referred the matter to Professor Selmi, an eminent chemist in Turin, by whom it was shown that the alkaloids in question were neither morphin nor delphinin, but that they were cadaver alkaloids analogous to those announced by Marquardt ten years before. Ignoring the claims of priority by Marquardt, Professor Selmi saw fit to change the name of the bases formed during the decomposition or putrefaction of flesh, to ptomaines, the Greek for a dead body or cadaver, a name which has since been exclusively used, for all organic bases derived from this source.

The relations which are at the present time known to exist between bacteria and cadaver alkaloids may be considered as fully established, much of which is owing to the indefatigable researches of Dr. Brieger, who announced that poisonous ptomaines were generated during the growth of pathogenic bacteria. He divided the ptomaines into two classes, toxins and non-toxins accordingly as he considered them derived from pathogenic or non-pathogenic organisms.

Without entering into the subject of the various ptomaines found by Brieger, Selmi, Gautier and others in decomposing animal tissues and animal fluids, it may be well to say that although the bacilli of anthrax, tetanus, tuberculosis, septicemia, the streptococcus of erysipelas, and the gonococcus of gonorrhea, etc., have been thoroughly studied by bacteriologists, and propagated, yet ptomaines and other products generated during their growth, have not received the share of investigation which their importance demand.

So far as this subject has come to my knowledge, the isolation of ptomaines, has been effected principally, if not altogether from the animal body and putrefying organic substances, and no attempt has been made to ascertain if an organic base is invariably a concomitant of bacteriologic culture. Not only this, but we should also direct our researches, in order to determine, if possible, whether the product of such culture will always give rise to the same identical ptomaine.

The writer must admit the difficulties by which he is confronted, arising in a great measure from the fact that, according to the present state of our knowledge, it is a difficult matter to distinguish even between the ptomaines obtained from well-known pathogenic bacteria. However, we should not be discouraged by these drawbacks, which are inseparable from all

newly developed sciences; but rather hopefully and trustfully look forward for future success. It has been the good fortune of the writer to enlist the coöperation of Dr. Silas Mouser, of San Francisco, whose superior ability and unswerving enthusiasm as a bacteriologist stand unquestioned, to obtain from him such pure cultures as may be required for these investigations. The products of these cultures as usually obtained from tube-cultures, are exceedingly small as to quantity, therefore the work must necessarily be both microchemic and microscopic in its character.

Tube-culture of the Fungus Actinomyces Pathogenic—found in the animal body and course of analysis.—The culture was carefully removed from the culture medium and macerated in water at a temperature of 50 degrees E., to remove adhering particles of the gelatinous culture medium. This process was repeated until the water ceased to give a precipitate on the addition of tannic acid. To this water which held the spores of this fungus in suspension, some sulphate of barium was added and the mixture passed through a filter. The spores with the sulphate of barium remained on the filter, the barium salt being used to stop up the pores of filter to prevent the spores from passing through. The filtered liquid was then tested with the usual reagents for the detection of alkaloids, but with negative results.

The fungus after its treatment with water, was then macerated in ether-alcohol (2 parts ether and 1 part alcohol) for twenty-four hours. The yellow color of the fungus was mostly taken up by this menstruum communicating to it anorange color. On concentrating this solution by the aid of a gentle heat; on cooling, nearly the entire amount of yellow coloring matter separated as an orange-colored flaky substance which was collected on a filter and washed with a small quantity of alcohol. The yellow coloring matter thus obtained proved insoluble in water, sparingly soluble in alcohol, but very soluble in ether and in chloroform. Attempts to obtain crystals from its etherial or chloroformic solution met with failure. The substance was insoluble in 10 per cent. solution of caustic potassium. When treated with strong nitric acid the yellow color was changed to a blue; exposure to day-light caused the yellow color to fade in a short time.

The etherial solution of this coloring principle is yellow, while its chloroformic solution presents an orange color. In all of the above stated properties, this coloring agrees with luteïn, the coloring matter of the *yolk of eggs*, and which is also found according to Hahn and Staedeler in the *corpora lutea*. On making a spectroscopic examination of this yellow coloring matter, it was found that its absorption spectrum exceeded that of the luteïn of yolk in length, and while the chloroformic solution showed only one absorption band, beginning at the Frauenhofer line *b*, causing the absorption of a part of the green, the blue and the purple rays of the spectrum, the spectrum of luteïn will be seen to have three absorption bands, one covering the line F, another band situated nearly midway between the lines F and G, and the third band commencing with the line G, and continuing to the end of the spectrum. However, there is no question but that the yellow coloring principle of the actinomycetes is a physical isomere of luteïn. (See accompanying spectroscopic illustration.)

The alcoholic filtrate, separated from the yellow coloring matter, was concentrated, water being added to replace the evaporated alcohol, acidulated with muriatic acid filtered from the yellow coloring matter which had separated. The colorless solution thus obtained was tested for alkaloids as follows:

Mercuric chlorid gave no precipitate.
Platinic chlorid gave an orange precipitate.
Potassium ferrocyanid gave a whitish precipitate.
Tannic acid gave a whitish solution in alcohol.
Iodo-iodid potassium, a brown precipitate, soluble in an excess of the reagent.
Potassium iodo-hydrargyrate a white precipitate.
Palladium chlorid, no precipitate, but on evaporation a double salt in the form of a Maltese cross and square plates was obtained.
Potassium ferricyanid with ferric chlorid gave rise to the production of Prussian blue.

The filter which contained the spores of this fungus, together with barium sulphate, was incinerated with nitric acid to get rid of all of the carbonaceous residue and finally heated to a dull red heat. On dissolving the residue in dilute nitric acid, filtering and adding the concentrated solution to the molybdic solution, a comparatively large amount of the yellow precipitate indicating phosphoric acid was obtained.

From the foregoing analysis it will be seen that the fungus actinomyces contains a ptomaïne, a yellow coloring principle isomeric with luteïn. And that the spores contain a relatively large amount of phosphorus in an undetermined state of combination, a fact which the author desires to place on record, pending future research on phosphorus and its relation to organic life.

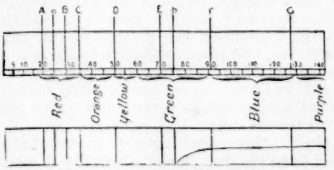


FIG. 1.—Lutein from actinomycosis.

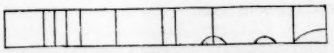


FIG. 2.—Lutein from yolk of eggs.

Bacterium of Green Pus—A Pure Tube Culture.—The culture was carefully removed from the culture medium. On examination the culture was found to consist of a mass of microscopic fibrous crystals, mixed with the bacteria of pus. The crystals were found to be insoluble in water but readily soluble in alcohol. The preliminary examination furnished the means to determine a procedure for conducting the analysis. The entire culture was treated with water in a similar way as the actinomyces, and for a similar purpose, and aside from testing the filtrates with tannic acid, testing was also made for phosphoric acid by evaporating a portion of filtrate, igniting, re-dissolving in dilute nitric acid and testing with molybdic solution. This last testing was adopted to remove all traces of any substance from the bacteria that might contain phosphorus as a phosphate or in some other organic combination, the ultimate object being a search for phosphorus in the bacteria.

The residue on the filter left after the exhaustion by water of everything soluble in it, was then subjected to the action of ether-alcohol by which a solution was obtained, which when a drop of it was allowed to evaporate on a glass slide and examined with a

microscope was found to leave a residue composed of transparent colorless acicular crystals arranged in stellar aggregations. When platinic chlorid was added to the ether-alcoholic solution, a precipitate appeared, which changed in a short time to yellow octohedral crystals; evidently a double salt of the ptomaine generated during the growth of the bacteria of pus.

The entire bulk of the ether-alcoholic solution was evaporated to dryness and re-dissolved in alcohol for further investigation, when the accidental loss of the solution prevented further work in this direction.

The filter containing the bacteria together with barium sulphate was incinerated and finally ignited and dissolved in dilute nitric acid, the process being conducted similarly as in the case of actinomyces. On applying the molybdic test a sufficient amount of the yellow ammonium molybdic phosphate was obtained to show conclusively that phosphorus in some form is a normal constituent of the bacterium of pus.

THE RELATIONS OF MATTER AND MIND.

Read at the Annual Meeting of the Indiana State Medical Society, May 16, 1894.

BY JAS. F. HIBBERD, M.D., LL.D.
RICHMOND, IND.

In the near future the most important and useful progress in medicine will be along biologic lines. Biology is the science of living things; in the broader sense covering all vital processes; teaches the phenomena concerning the genesis, the development, decline and death of all vital organisms.

To my mind it is a self-evident proposition that a physician should fully understand the cytogenesis, the morphology, the histology, the anatomy, the physiology and the pathology of man, and as man is a microcosm of animated nature it is but a corollary that a perfect physician must be a thorough biologist.

In the matter of the biology of the human mind there is abroad a great popular misunderstanding, and I am apt to believe that physicians have not given such attention to the relations of matter and mind as to leave no shadow of dubiety in the premises in their own minds.

No student of current mental conditions has failed to recognize the difficulty of accounting for the incongruities of mental manifestations met with in all classes of people, and certainly no physician of experience but has been puzzled in many instances to draw the line between physical disease and so-called mind disorders. Much of the uncertainty in these cases is due to the fact that we have not sufficiently mastered the physics or the functions of the nervous organization in which the mind originates. In this state of knowledge it has been beyond our ability to point out definitely the true relation to hypnotism, to spiritualism, clairvoyance, Christian science, faith cures and a long list of similar disturbances to ordinary normal mental operations. It is my contention that all these are understandable erratic operations of the mind as emanating from the nervous organization, and it is the intent of this dissertation to indicate how I arrive at this conclusion. I beg to premise that in this study the definition of psychology is restricted to its etymologic signification, to-wit, the science of the soul, quite a distinct thing from the somatic mind as herein elucidated, and that in this discussion I do not enter the realm of psychology.

When one attempts the analysis of the relation of matter and mind by a study of it, as it exists in the human adult, one fails of success most signally. The relation here is so involved, its manifestations so diverse, so extensive and apparently so mysterious that its essential nature can not be made out by such a study, and yet this has been almost the exclusive field cultivated by investigators of metaphysics since the time of Aristotle with the constant result of endless disagreements and confounding confusion. Accordingly, for a satisfactory elucidation of this relation we must pass the schoolmen, depart from scholasticism, and make use of modern scientific methods of investigating involved problems, devoting ourselves to seeking the simplest form in which the relation of matter and mind exhibits itself and following its development, step by step, in its ascending scale until it reaches its maximum in enlightened man.

The amœba is the lowest organism that exhibits the essential characteristics of animal life and its genesis is in protoplasm. The amœba is conceded on all hands to be an animal, and I will seek in it the first link of the chain of nervous energy that extends through all forms of animal development up to man, and still continues to extend in man as witnessed in his expanding knowledge and increasing enlightenment. The amœba is a single cell whose habitat is water containing protoplasm, and at rest and not under pressure, is globular. If it desires food it projects from its surface a pseudopod, a finger-like process, from its general substance. If this feeler finds nothing the animal wants, the pseudopod is retracted into the general mass of the amœba. This may be repeated indefinitely and from any part of the cell, and when the pseudopod finds something seemingly suitable to its needs the body of the amœba follows up the pseudopod, and if the something, on examination, turns out to be a morsel of food, laps itself about the morsel, secretes a digestive juice, dissolves and absorbs the nutritious part of it, then unwraps its body and releases the indigestible refuse. When sufficiently developed to procreate its species the amœba divides by fission, making two organisms with identical structure and functions, each of which follows precisely the same career as the parent and has posterity in like manner to continue the family.

Here, then, is an animal of low degree, representing in minature all the essential phenomena of the most exalted animal creation; *e. g.*, it has volition—it wills to move and at once projects a pseudopod; it has judgment—it meets a morsel of something, seizes and examines it; if found to be food appropriates it, if not food discards it; it has secretion and absorption—it pours out a digestive fluid, dissolves its food into a peptone which it absorbs and assimilates; it has growth and reproduction—it develops by appropriating food, and reaching the procreative stage, divides, creating two amœba. Are not these functions of the amœba all of the essential functions of human beings? Are not the differences between the amœba and man, differences of degree and mode of manifestation and not of kind? Does not the amœba, a single microscopic cell of undifferentiated protoplasm, exhibit in every part of its organism all the attributes that promote the life and perpetuate the species of man who is but a community of untold billions of cells differentiated into departments and organs, such that each function has its assigned cells

to perform every special service? In short, if man is a microcosm of the cosmos, is not the amœba with equal appropriateness a microcosm of the man?

If protoplasm is the blastema of the amœba whence comes protoplasm? To answer this basic query, I must call attention to leading facts in the dynamics of physics operating to fashion the world as we find it, such as will indicate my line of argument. I must, however, confine my rehearsal to some of the more salient points; to recite all that would support my contention would require a volume, while my privileges of time and space will be exhausted in a few paragraphs.

There are about seventy elements that constitute the world, but only a small percentage of them are met with in a simple or uncombined state. These elements the Creator has made up of atoms and has endowed the atoms with ceaseless oscillatory motion. When the atoms of two elements are conjugated under chemic affinity a new substance is formed, wherein each element has lost its distinctive atoms and motions, forming molecules that have their distinctive characteristics. These new substances are subject to the law of chemic affinity and are as ready to conjugate under proper conditions as were their parent elements, and thus these conjugations go on almost *ad infinitum*. Those continuing conjugations of atoms and molecules are the effect of a primal law of the Creator impressed upon matter in the beginning, the mandate being that neither atom nor molecule shall ever rest, and by reason of perpetual motion shall work perpetual progress. Every step in this progress modified the environment and every modification of the environment invited phases of the conjugation of molecules not possible under any previous condition. When these progressive conjugations had continued for eons, the face of our globe had reached a condition wherein four of the elements, to-wit, oxygen, hydrogen, nitrogen and carbon combined to form a semi-fluid, slimy mass and this slime was primary protoplasm. The primal law of progress, forcible as ever, wrought modifications in this protoplasm and in time a speck of it segregated and became a cell in which was manifested an advanced phase of matter in motion, known as vital activity, notable in that the cell absorbed surrounding material and converted it into its own substance. This is a point to claim acutest attention. It marks the first step in the operation of the primal law of matter and motion beyond the simple, never-failing conjugation of atoms and molecules whenever conditions favored. and always in definite proportions and with unvarying results limited to the act of union. True, this first step was but a slight departure; the surrounding material from which the new-born cell absorbed its pabulum was the protoplasm from which it was just segregated, which, already cognate, required but slight assimilation to become identical with the cell substance, but, nevertheless, this step was the initial one in the mode of motion in matter that has produced all the marvelous forms and colors and motions of the vegetable kingdom, as well as the still more wondrous developments in the animal kingdom.

The initial cell was without a nucleus and was known as a moner, but the energy creating it continuing, further developments followed, a nucleus was formed, presently more elements were incorporated completing the plasm of the amœba which then appeared. Nor did harmonious progress halt or waver with the amœba; development continued in it until its congeners were many.

Thus was the amœba born, and further progress of animal organisms to higher classes was by the aggregation of cells in greater and greater numbers and their differentiation into organs and systems for special but associated service. As has been illustrated, the amœba was undifferentiated protoplasm but it had voluntary motion, exercised equally by every part of its body, while in the higher animals motion is the service of the muscular tissue. The amœba had secretion but no glands; in the higher animals are many secretions, each produced by a special glandular structure. It exhibited consentient autonomy in all its parts; this is secured in the higher animals only through the most intricate nervous organization. With the increase of associated cells and differentiation of function in the more than 300,000 species of the animal kingdom, the development of the nervous system progresses *pari passu* with the other systems and, finally, in man it still continues its evolution, at least of function, while all other cognate departments appear to have attained their limits. As a whole, the scale of progress has been uniform—there are no cataclysmic phenomena in biology. There are, however, needs of animals that have caused the cultivation and achievement of special diversions of nervous energy with corresponding development of cells to answer the demand, *e. g.*, the eagle can see its prey from an unknown elevation; the dog can follow a selected scent when mingled with numerous other closely related scents, and so on. Even in different individuals of the same species there are marked divergences from the average normal, illustrated in the arithmetical juvenile prodigy who adds up five columns of four digits each, at the same time, and in the musical monstrosity known as "Blind Tom." All these specialized sense developments are due to the influence of the environment on the direction the primal energy in matter and motion may take when acting through protoplasm.

In the further consideration of the relations of matter and somatic mind, we will abandon the anatomy of the nervous system and study its physiology, adopting the classification of Hulings-Jackson who divides it into lowest, middle and highest levels. The lowest level is the old spinal system of Marshall Hall, composed of centers that preside over the automatic activities of the body. The middle level consists of the motor area of Ferrier and others, in the central cortical region of the hemispheres. The highest level is represented in the anterior and posterior regions of the hemispheres and, like the centers of the other levels is sensori-motor. The centers of the lowest level may act independently of the centers above it. The centers of the middle level can act independently of the highest centers but are necessarily associated with the centers of the lowest level. The highest level is the supreme commandant of the nervous system, but its centers can only exercise physical force through the centers of the levels below it. Its marked distinctness is being the seat of the somatic mind, and the anterior region of the hemispheres is more specialized in this behalf than the posterior, where the mixed motor function predominates.

In this connection it is important to understand that the brains of men differ in form, size and force

one from all others, as the bodies of men differ in form, size and force, one from all others, and in like manner the sundry regions of the brain differ as the sundry organs of the body differ; in short, as there are no two human bodies precisely alike, so there are no two human brains precisely alike, and by the same token no two somatic minds alike.

The mind is made up of departments or sections that usually act in more or less harmonious concert but may, and in truth do often, manifest exalted function in one department and depressed activity in another department, and these varying conditions frequently change under changing environment and stimulation. If we gain a clear concept of these pregnant facts we will have but little trouble in understanding that the occult mental phenomena, claimed as a special endowment of supernal power is simply the unbalanced erratic activity of a perturbed physical brain.

In numerous instances one department of the mind has been exalted, with apparently a corresponding and related depression in another department, and under this condition the functioning of the stimulated center is so intense that it overrides the function of other centers of the highest level, indeed dominates them all to the extent of suppressing all consciousness of every act not under the dominion of the excited center, as *e. g.*, in catalepsy, somnambulism, hypnotism and numerous minor and more transient manifestations during excited passions. In other instances, several centers have undue functioning and together disturb the average normal activity of the mind, inducing hysteria, spiritualism, clairvoyance, Christian science and quite a catalogue of other morbid conditions of varying intensity and duration, covering the superstitions of the world, countless in number and inconceivably discordant in form, extent and direction.

These errors of function of the intellectual nerve cells of the anterior region of the cerebral hemispheres are not always of this gross and distinct character, indeed, generally, they are in the first departure an almost imperceptible step, a mere shading of error, growing deeper and darker in many sad instances, until the somatic mind is entirely obliterated.

The etiology of these erratic phases of the somatic mind is as varied as the manifestations and not constant in any number of them. The physical structure of man is not identical in any two persons and the nervous tissue, both macroscopic and microscopic is morphologically as irregular as other systems; this undoubtedly accounts entirely for some of the defects of function and is a coadjutor more or less potent in many.

The environment is responsible for much that presents in these cases, teaching both by observed example and covert influence. The inmates of a French juvenile institution suffered from an invasion of catalepsy, epileptiform seizures and other neuroses, and the distemper was arrested only by the exhibition of incandescent metal instruments prepared to cauterize the next victim of the disorder. But in no case are such derangements either induced or relieved by the will power of one person over another, except through spoken word or suggestive motion. The greatest misconception touching hypnotism arises from the widely entertained popular belief that a hypnotist can control a hypnotee by will power alone, whereas it has been abundantly proven that the hypnotist can not influence the hypnotee through the exercise of unassisted will power, but only through present suggestion or previous arrangement.

In the history of the amœba it was shown that the cell exercised the attributes of a living animal by all parts of its protoplasm, and that the development of the higher animals, including man, was by an increase of cells and their association and differentiation into tissues, organs and systems each with special functions. It is, however, important to understand that in the increase of cells and increase of better defined function the individual cells retained something of the original attributes and attitude of the amœba, illustrated in man as in all the higher animals, by the fact that the cells of every tissue select the pabulum for the tissue from the general supply; thus the cells of bone select from the current of blood the material for bone, absorb and convert it into bone; the cells of muscle select the appropriate instrument for muscular tissue and transform it into muscle; and the nerve cells arrest from the circulation only the substances to maintain nervous tissue; and in all these instances this service is performed by virtue of the inherent discriminating energy of the cells independently of the highest, the middle or the lowest levels of the nervous system; this energy being the lineal descendant through protoplasm and the amœba of the primal energy of matter in motion, here, as in all intermediate organisms between moner and man, modified by the surroundings, and harmonized by the higher nervous levels of the system.

In all past time, the origin and nature of consciousness has been the most abstruse problem in metaphysiology. The origin of mental energy in man, inculcated in this dissertation, affords a solution of the problem. Neither the amœba nor the cells of the tissues of man can seize the floating particle of matter, examine it, and decide whether or not it is fit for food without knowing the particle was there and the purpose for which it was examined, and knowing is an act of consciousness. The difference between their consciousness and that arising from the anterior convolutions of the hemispheres is one of degree and not of kind. The former is evanescent, serves its purpose for the occasion and vanishes unregistered; the latter is permanent, always ready for action while the brain is intact and registers its service in the memory.

Do not these converging testimonies focus the truth in the proposition that the somatic mind of man is clearly enough the highest manifestation and legitimate sequence of the operation of the primal law of matter and motion, impressed by the Creator in the beginning on the elements of the earth?

SECTARIANISM IN MEDICINE—DISTINCTIVE FEATURES OF EXISTING MEDICAL SECTS.

Read before the Practitioners' Club, Nov. 26, 1894.

BY EDWIN J. KUH, M.D.
CHICAGO.

The three sects recognized in the community in which we live are the regular profession, the homeopathic and eclectic.

In denoting the regular profession as a sect, I am

conscious of a violation of the meaning of the term, sect. A sect is a body of persons who have separated from others in view of some special doctrine or doctrines. Now, the regular profession has no separate doctrine or doctrines, nor has it separated from anybody.

When you cut off a piece of a dog's tail, you do not cut off the dog from the tail, but the tail from the dog. For it is a fact well recognized by the profoundest experts of natural history, that it is the dog who wags the tail, and not the tail who wags the dog.

The regular profession has been stigmatized by certain apostates as the "old school." The spirit is the same as that of a man who designates the mother who has borne him, and given him life, and nursed him at her breast, and fostered and raised him, as the "old woman."

This idea of decrepitude and senility has been foisted upon the public and is given popular credence.

It appears to me, however, that the old school of medicine is, in spite of its age, rather frisky and vigorous. William Harvey, it must be confessed, has been dead for some time; and John Hunter and Edward Jenner, if they had lived, would unfortunately figure as gentlemen rather advanced in years and with a crick in the back. But, fortunately, the science they have enriched has outlived them.

Science is a mother of unlimited fecundity and vitality. Old as she is, she seems as far from her climacteric as when she was first born. At every age and every year this "old school" breeds new progeny, who bound into the arena and wrest new knowledge from the silence and mystery of the universe. Cruveilhier, Rokitansky and Virchow are her children who stood parent to pathology; Laennec and Skoda to physical diagnosis; Hebra to dermatology; Semmelweiss and Oliver Wendell Holmes to the most appalling menace to maternity; Helmholtz and Albrecht von Graefe, Czernak, Marion Sims, Jackson, Morton and Simpson, Lister, Charcot and Weir Mitchell, Koch and his pupils, each and every one became a leader and builder in his special domain.

The structure of medical knowledge, as that of all knowledge, will never become complete. The infinite vastness of science is its guarantee against stagnation and age. The medical body to which we belong forms a strong and indissoluble brotherhood with the natural sciences. We would defy any body of scientists to lay larger claims than ours upon Helmholtz. He belongs equally to us and to them.

Robert Mayer, the country physician, has given to physics the law of conservation of energy; and it was before a combined body of naturalists and physicians at Heidelberg, in the year 1889, that the much lamented Heinrich Hertz, of Bonn University, proclaimed his wonderful investigations on the unity of the phenomena of light and electricity, thereby giving the most brilliant experimental proof ever recorded in physics of the correctness of the purely mathematical doctrines of Thompson and Maxwell. In this manner does science enrich medicine, and medicine science.

Rational medicine, as we all know, has no dogmatic system and no pope. Whoever gives us knowledge that will bear the test of critical scrutiny is welcome. What we are after is the truth! We do not bow to authority. The rejection of tuberculin was none the less emphatic because Koch fathered it. And Koch, who established a great principle of toxin effect, but no cure for tuberculosis, took a rest cure in Egypt and sat at the foot of the pyramids and gazed into the eyes of the sphinx.

How different with homeopathy. The stuffed prophet still lives, and his disciples bow before the fetich. Homeopathy stands or falls with its pope. No Hahnemann, no homeopathy! And still, how inconvenient this gentleman has become to his followers. His itch pathology and other paraphernalia have been discarded; his disciples with evasive eyes can be found in drug stores buying ounces of tabooed drugs, such as calomel, phenacetin, hypodermic tablets of morphia, etc., etc. The teachings for which their name stands have been renounced, but the name is still carried. And why is this done? Why is it that homeopathy, whose speedy extinction Oliver Wendell Holmes predicted fifty years ago, is still flourishing in this country at least? If homeopathy is a delusion why does it take people so long to find it out? The reasons are manifold but clear. Man is an animal who likes to be deceived. Everybody has a secret love for the marvelous. The marvelous is the most beloved child of faith.

A story is related of a bright young physician who strove for years, honestly but unsuccessfully, to acquire success. He was finally obliged to give up in sheer despair, and to masquerade as a quack. This brought him the success he had failed to acquire by legitimate means.

To most people their medical preference is a sort of physical religion; a religion of the body and of disease. They have the homeopathic creed because their grandmother had it or their neighbors have it. The doctor of their choice may have a lovely complexion or such charming manners, or may be a great light in the church.

"Unfortunately, among the guardians of our morals, the ministers, are to be found the most ardent supporters of quackery in its various forms."

Then most of the calls which physicians receive are for minor ailments, which cure themselves under favorable conditions. Pellets or tinctures of an attenuation, which expressed in figures, exceed the most extravagant vagaries of a demented paralytic, are given under the pretense of effecting a cure. "During the entire course of the sickness, pellets and tinctures are faithfully administered; the attention of the patient is assiduously called to their use and imagined effect, and every improvement in his condition attributed to their influence."

Then there is, as I said before, the surreptitious substitution of rational drugs and doses for the homeopathic ones. The hypodermic syringe, in the hands of the homeopath, requires the same hypodermic tablet for the allaying of pain as we use. The homeopathic surgeon, oculist and obstetrician has, provided he possesses average intelligence, recourse to all the methods used by rational medicine. His affiliation with homeopathy, therefore, can only emanate from dishonest motives. He maligns his parent, disowns his name, but allows the parent to support him. They have been likened to medical highwaymen, who with one hand grasp the throat of the profession and with the other appropriate its possessions. If the theory of "*similia*" were really correct, which it has been abundantly proven not to be, it could be practiced by honest men under an honest name. I can, therefore, not recognize the slightest defense for homeopathy as a sect.

"Hahnemann, driven from the court of science, appealed to the people. His cause has been kept a popular one ever since. His disciples have ever avoided a scientific discussion of their doctrines. In view of these facts, how can an intelligent person or lover of true science countenance homeopathy for a moment? If he does, his conduct is indefensible."

With the riper experience of years of practice I have become convinced, although I once held different views, that such recognition of homeopathy as meeting practitioners of that system in consultation is an indorsement of their absurd doctrines and an inconsistent practice. It is to be supposed, also, that those who thus compromise themselves have some motive other than pure benevolence or tolerance.

It does not bespeak well for the intelligence of the American public in medical matters, that homeopathy has received such general recognition and broad encouragement in our country. In Germany, where the medical profession stands probably on the highest level, a homeopath is so rare a phenomenon as to form a promising nucleus for a dime museum. There are no homeopathic schools in Germany, and but one in Great Britain. In Great Britain and Ireland with their 35,000,000 inhabitants there are but 275 homeopaths. The United States, however, are a perfect hotbed of this quackery. It is computed that one-eighth of our practitioners are homeopaths.

The faith in homeopathy must, therefore, be considered a remarkable anomaly of our century. It is a superstition of equal mental obliquity as the belief in witchcraft, in Perkin's Tractors, in the divine right of kings, in the infallibility of the Pope or in the Democratic party.

We shall now proceed to a consideration of the distinctive features of the last existing medical sect, namely, the eclectic. The very few eclectics with whom I am acquainted wear a long beard and ride down town on a bicycle. An eclectic is, therefore, a gentleman with a long beard, who rides down town on a bicycle. In addition to this he is supposed to treat both by rational medicine and by irrational medicine, namely, homeopathy. Or, in other words, "you pay your money and take your choice."

I can not conclude these remarks without saying some uncomplimentary things about the regular profession. One of the most pernicious practices of the regular profession is excessive medication. Most of us have accustomed the public to consider a prescription the equivalent for a fee. When a patient consults us we are supposed to dive into our pockets for prescription blanks. This absurd practice injures the patient, injures the profession, helps the homeopath and increases the so-called silent majority.

Then there is another point: Those men to whom is intrusted the education of the thousands of young men who are newly created physicians, are not always guided by the highest motives. Our medical colleges are in a large measure responsible for the existence of those medical scalpers who hover around the limbo of our sacred profession under the name of homeopaths and eclectics, or even regular physicians. Our students are graduated with some capacity for good and a great capacity for harm. It was a favorite saying of Billroth's that it was his highest ambition to educate students to such a level that they could not do any harm. "*Non nocere*" is the device which should be inscribed upon the banner of medicine. Raise your standard of medical education and you will crush out medical sects.

NOTE.—I wish to acknowledge my indebtedness to Dr. W. W. Browning, from whose article, "Modern Homeopathy," I have quoted.

THE DISEASE OF INEBRIETY.

ITS STUDY FROM THE STANDPOINT OF THE EXPERIENCE OF AMERICAN PHYSICIANS OF EMINENCE WHO HAVE WORKED IN THIS FIELD OF RESEARCH.

BY EDWARD C. MANN, M.D.
NEW YORK CITY.

(*Continued from page 853.*)

HEREDITY.

"In referring to the influence of alcohol," says Prof. Willard Parker, "we must not omit to speak of the condition of the offspring of the inebriate. The inheritance is a sad one. A tendency to the disease of the parent is induced, as strong if not stronger than that of consumption, cancer or gout. The tendency referred to has its origin in the nervous system. The unfortunate children of the inebriate come into the world with a defective organization of the nerves."

There is a class in every community of which we have before spoken, how numerous, it is not easy to say; the inherited mobility of whose nervous organization predisposes them to fall into this diseased condition with an almost positive certainty. "It is a fact," says a recent writer, "that drunkenness or dipsomania is a physical disease, depending on some molecular change in the nerve tissue, the direct effect of alcoholic poisoning; and the 'gemmules' of this tissue, when transmitted, become active factors in the formation of character." "It is important," says another writer, "to keep in view that the person afflicted with a tendency to drunkenness obeys a law of his members more potent than his will."

Heredity, then, is another fruitful cause why the drinking habit continues amid such abundant evidence of its terrible results. In the presence of the facts and statements coming to us from varied and most reliable sources, what appalling dimensions does our subject assume? Well might Dr. Richardson, of London, say in view of them: "The most solemn fact of all, bearing upon the mental aberrations produced by alcohol, and upon the physical, not less than upon the mental, is that the mischief inflicted on man by his own act and deed, can not fail to be transmitted to those who descend from him, and who are thus irresponsibly afflicted. Among the inscrutable designs of nature none is more manifest than this, that physical vice like physical virtue descends in line. It is, I say, a solemn reflection for every man and woman that whatsoever we do to ourselves, so as to modify our own physical conformation and mental type for good or evil, is passed on to generations that are yet to be. Not one of the transmitted wrongs, physical or mental, is more certainly passed on to the yet unborn than the wrongs that are inflicted by alcohol. We, therefore, who live to reform the present age in this respect, are stretching forth our powers to the next, to purify it, to beautify it, and to lead it toward that millennial happiness and blessedness which, in the fullness of time, shall visit this earth making it, under increasing light and knowledge, a garden of human delight, a 'paradise regained.'"

Another cause why drinking habits prevail is found in the ignorance or skepticism of the masses of the people. Notwithstanding the abundant testimony on these points, neither the majority of the medical profession, of the ministers of religion, nor of the public, have hitherto accepted these truths, or regulated their conduct in accordance with them. This ignorance must be dispelled, this skepticism overcome. The experience of man in all ages is that, when the convictions of the intellect are at variance with his habits, desires and appetites, he requires "line upon line and precept upon precept" to move and keep him in the right path. In these views I find my apology for reiterating, as I have done, facts and principles so often and ably stated and demonstrated by others.

Reliable statistics lead to the conclusion that two-thirds of our pauperism, disease and crime have their origin in this prolific source. In the endeavor to form some proper estimate of the far-reaching influences of this agent, we must not forget how nearly the complicated and all-important questions of the prevention and punishment of crime and of individual and social responsibility are related to this subject. They have already attracted the attention of students of medico-legal science, which is doubtless destined to be modified in the future by the study of them. Moreover, in this country, inebriety has already passed into the legislation of numerous States, and the duty of Legislatures in reference to it excites increasing attention. Nor have the annual squandering of six hundred millions of dollars ($600,000,000), with its harvest of want and woe, and sixty thousand deaths, escaped the notice of statesmen. In the House of Representatives of our Congress, at its session in 1877, an elaborate bill was introduced by a very prominent and influential member, by the provisions of which he hoped to greatly diminish these evils. In Great Britain there has been and now exists, with a quickened activity, an influential association for promoting legislation for the "control of habitual drunkards"—legislation for the aid of institutions based upon the specific views and dogmas upon which our American asylums are founded. In Australia, the Colonial government has already enacted such laws and the home parliament has sanctioned the action. In France, in 1877, *La Temperance* made its appearance, and gives evidence that it will do good work in the cause. These are indications that the minds of the medical profession are taking the true direction and that, relinquishing the errors of the past, many of them are awakening.

The church is awaking to the moral bearing of these questions. Witness the position of the bishop and clergy of Central New York, listening with respectful attention and approval to the teachings of our associate, Dr. Wey. In the city of Buffalo there was a great demonstration, sanctioned and led by the bishop and priests of the Roman Catholic Church, which, if I am not in error, has no precedent in the history of this movement in this country, while Cardinal Satolli is heart and soul for temperance. The vast influence thus exerted we can hardly estimate. In the same city, a few days since, the pastor of a large and influential Protestant church made the following remarks: "In England, where the evil is even more marked than with us, the Established Church, so long indifferent to the danger, has begun to arm herself for the conflict. The clergy are manifesting a zeal never before seen. Canon Duckworth, one of the royal chaplains, and Canon Farrar, among the most brilliant of English writers, have spoken decidedly in favor of total abstinence. For men brought up as they have been, holding the positions to which they have been raised by royal favor, to take this stand, requires an amount of moral heroism which unfortunately but few Christians possess. Never in the history of the great University at Oxford had a temperance lecture been delivered from its pulpit till Canon Farrar preached there a few years ago. When the Church of England is zealous on the subject of temperance we may know that the evil is of gigantic proportions."

Surely, in all these movements, we may find cause for the hope that remedies adequate to the removal of this overshadowing calamity will become universally known and applied. That the American Association for the Cure of Inebriates has already done much to disseminate the knowledge of its vastness and of the methods of its prevention and cure we need not doubt. We may be but one of the forces at work in this cause, but we are far from being an unimportant one. The seed we sow is springing up and must in due time bear an abundant harvest. May we not, then, without the appearance of indecorous self-assertion claim to hold the place—not of "advanced students" only, but also of instructors to those who truly desire to be informed on these engrossing themes; and go on with our appropriate work with renewed diligence, confidence and hope? As certainly as the "good days we look for" shall irradiate the earth, so certainly shall this stupendous obstacle to their advent be taken away; for the era of universal peace and purity can never visit a race debased and embruted by this prolific source of moral and physical degradation. Dr. Mason once said respecting the study of the disease of inebriety: "This is a vast field into which we have entered, and in which we may hope to reap the reward of true laborers; which on high authority, we learn is apportioned in accordance with their sincere purposes and persevering efforts rather than with their success." Dr. Mason was preëminently a "true laborer," and for his zeal, sincerity, philanthropy and perseverance in his efforts for the prevention of the evils of intemperance to his fellow-men we doubt not that he is now reaping a rich reward, and that ere now he has heard the words: "Well done, thou good and faithful servant."

Dr. Geo. Burr, of Binghampton, N. Y., in writing on the "Pathology of Inebriety," thus expressed himself, and his views are worthy of careful consideration and attention: "Inebriety has at length come to be regarded as a disease. Under the names of dipsomania (thirst craziness), or methomania (an irresistible desire to drink), it has found a place in the catalogue of diseases. It is not, however, a new-fangled notion, or a novel idea, to regard the intemperate use of ardent spirits as the result of a morbid condition." Nearly sixty years ago, Dr. Rush referred drunkenness to a morbid state of the will. To effectively treat the subjects of this disease he recommended "the establishment of a hospital in every city and town in the United States for the exclusive reception of hard drinkers." "They are," he remarks, "as much objects of public humanity and charity as mad people." Esquirol distinctly recognizes the existence of a disordered condition of the

system, which leads certain individuals to the abuse of fermented drinks. "There are cases," he continues, "in which drunkenness is the effect of accidental disturbance of the physical and moral sensibility, which no longer leaves to man liberty of action." Dr. Robert Jamieson, of Aberdeen, speaks of the propensity to drunkenness as "a morbid impulse, forming a variety of moral insanity, referred to under the name of dipsomania." In 1833, Dr. Woodward, of the Worcester (Mass.) Insane Asylum, in a series of essays, maintained that intemperance was a disease, and declared, from his own experience in the management of many hundreds of intemperate persons who had committed crimes which rendered confinement necessary, or who were insane in consequence of this habit, that this disease was amenable to treatment, and that "a large proportion of the intemperate in a well-conducted institution would be radically cured, and would again go into society with health reëstablished, diseased appetites removed, with principles of temperance well grounded and thoroughly understood, so that they would be afterward safe and sober men." Dr. Isaac Ray, while he was inclined to believe that this condition is the effect of a long-continued voluntary habit, yet affirmed that "there is strong evidence in favor of the idea that they (the pathologic changes) in turn become efficient causes, and act powerfully in maintaining this habit, even in spite of the resistance of the will."

Opinions of a more recent date confirming this view, might be quoted *ad libitum;* but the foregoing are sufficient to establish the proposition laid down that it is no novel or newfangled idea which refers the phenomena of drunkenness to morbific causes and to a diseased state of the system. In considering the subject of inebriety as a disease, we must bear in mind that it is the propensity or desire to indulge in the use of ardent spirits, and not the habit of drinking to excess, or drunkenness, and its subsequent effects upon the economy of the human system that is to be regarded as the morbid condition. A broad distinction must be made between the two. The latter is but the development of the former. The propensity when under the influence of exciting causes arouses the appetite, overcomes the will, blunts the moral sensibilities and makes everything else subservient to its demands. The habit is the natural sequence of the growth and development of the propensity. The one bears the same relation to the other that the eruption of smallpox bears to the contagion of that disease, or the several stages of an intermittent fever, to the poison of malaria. The delusions of the insane are but the morbid phenomena of a mind disordered; so the love of the bowl, and the self-destructive acts of the inebriate are likewise the manifestations of a condition of the organism that may well be regarded as diseased. What is the true pathology of this disease? Where is its seat? Why do men drink? What is the secret of that terrible propensity which impels them to put forth their hand to take the intoxicating cup? To answer these questions fully and satisfactorily requires a degree of knowledge relative to the intricate and complicated operation of his own organism at which man has not yet arrived. That the seat of the disease is much more remote, and that it is more intimately related to the ultimate and more recondite operations of the economy than the opinions which have usually been held would lead us to believe, we can not but admit; but in what tissue and by what change of structure do we have the first intimation of the morbid propensity to drink? The early stages make no revelations. The unhealthy sensations that first call for alcoholic stimuli make no changes that can be located. As in some forms of insanity, the knife of the anatomist would be unable to reveal the slightest aberration from a normal condition in any of the structures. It is only when the propensity has gained the ascendency, when the habit of excessive drinking has become established that we begin to find the morbid changes and the anatomic lesions.

A careful study of the phenomena of inebriety, and a just appreciation of its symptoms will enable us, however, to obtain an inkling, at least, of the true pathology of this terrible malady and curse. The more prominent symptoms of inebriety are great nervous irritability or restlessness, unnatural sensations, an uncontrollable desire for strong drink, and a disposition to frequent fits of intoxication from the use of ardent spirits. These all indicate that the nervous tissue is the seat of the morbid influence. The symptoms enumerated are those of morbid sensation, of perverted taste and appetite, of disorder especially in that portion of the nervous mass in which is evolved the desire for alimentary material or hunger and thirst. The disordered sensation and perverted taste are not unlike the emotional and intellectual disturbances that characterize insanity, and more especially are they similar to the hallucinations of the insane, to those impressions made upon the eye and ear, which give rise to sights and sounds entirely imaginary. Disorder of the nerves of taste creates a desire for strong alcoholic beverages which nothing else will satisfy. The same disorder affecting the apparatus of hearing, conveys the impression of supernatural voices or of strange and anomalous sounds. In the morbid manifestations of one we have methomania or drunkenness; in the other we have perversion of the moral sense, homicidal impulse, hallucinations, delusions, etc.

The seat of the abnormal sensations in this disease, according to Professor Reid, is in the encephalon and not in the stomach or in the pneumogastric nerves. This opinion is formed from the fact, which he ascertained, that the sensations of hunger and thirst continued after both these nerves had been divided. . . . In the anatomic structures, then, the seat of the morbid propensity to drink must be referred to that portion of the brain which takes cognizance of the nutritive operations of the body; to the nerves of taste, viz., the third branch of the fifth pair; and to the glosso-pharyngeal, or one of the eighth pair; to the trunks of the pneumogastric nerves, and to their terminal branches upon the mucous membrane of the stomach. It is probable that in the earlier stages, only a part of these structures is involved; but that, as the disease advances and the habit becomes fixed, the healthy operation of the entire apparatus is perverted and changed. In what the morbid condition consists, what molecular changes in the nerve substance are characteristic of this disease, as has already been remarked, has not yet been revealed to us. That there is some such change we have good reason to believe. . . . Of a certain grade of diseased tastes and appetites we have examples in the capricious demands of the stomach in chlorotic females, in certain longings

during the period of gestation, in the voracious appetite often seen in dyspepsia, and in the thirst of diabetes. These conditions are generally transient, or, if persistent they rarely exceed certain limits. Instances have occurred, however, of the grossest excess in devouring slate, clay, chalk and other similar substances by females whose appetites and taste had become perverted by disease. The opium habit, as it is termed, is another instance of morbid appetite, depending upon causes similar to those exciting inebriety; and there are few physicians, I apprehend, who have not witnessed instances of extensive disorder, manifested by excessive fondness for coffee and tea.

There is a natural desire of man for stimulants, which under proper subordination and moderately indulged in, could be a source of enjoyment and pleasure. It is this propensity becoming diseased that causes the uncontrollable desire for strong drink which gives rise to the phenomena, and which entails upon the unfortunate subject of the attack all the evils of inebriety.

Inebriety presents itself under various phases and assumes diverse characteristics. One class of inebriates are termed constant drinkers. In them, the propensity seems to be always present, urging the subject of it to daily indulgence. The use of alcoholic drinks with this class is a continuous habit, and as the disease progresses, in its later stages, every night finds the victim in a state of intoxication. Persons of this class are solitary drinkers. The propensity is not excited by either social or convivial incentives, but the indulgence is caused by an irresistible desire for drink. This form of inebriety is the most obstinate and the prospect of reform or cure is much less than in some others, and it is only by the strongest restraint and the most persistent efforts that any improvement can be made.

Another class of inebriates are subject to paroxysms of drunkenness, with intervals of greater or less duration, when they are entirely free from the habit, and feel no propensity to drink. The attacks are periodical in their character, and in this respect they are not dissimilar to other forms of periodic disease. The intervals vary materially in duration, some lasting only a week, others continue a month, a year, and even longer periods have been noticed. Dr. Van Arden, of Auburn, related to me a case in that city where a period of eight years elapsed before the paroxysm of drunkenness returned. The periodic form is probably the most common. A large proportion of the drunkenness under observation is of this character. The paroxysms appear to be excited by opportunities for gratifying them, such as visits from the country to our larger towns, the frequenting of drinking places, etc.

(To be continued.)

SOCIETY PROCEEDINGS.

Southern Surgical and Gynecological Association.

Seventh Annual Meeting held in Charleston, S. C., Nov. 13, 14 and 15, 1894.

FIRST DAY—MORNING SESSION.

The Association was called to order by the President, Dr. C. Kollock, of Cheraw.

Prayer by the Rev. Dr. Campbell, of Charleston.

An Address of Welcome was delivered by the Mayor of Charleston.

DR. BRODIE, of Charleston, followed with an Address of Welcome on behalf of the local profession, and President Kollock responded in behalf of the Association.

DR. WM. E. PARKER, of New Orleans, read a

MEMORIAL ADDRESS

On Dr. Warren Stone, which was prepared by the late Dr. A. B. Miles, of New Orleans. He said as Professor of Surgery in the University of Louisiana for thirty-five years, as surgeon to the Charity Hospital for thirty-eight, and as general practitioner from 1832 to 1872, whose experience covered eighteen epidemics of yellow fever and cholera in New Orleans, the name of Warren Stone is impressed indelibly upon the local history of a remarkable period. In his surgical clinics he taught the advanced surgery of the old school. He taught the principles of drainage in suppurative arthritis, in hepatic abscesses and in pyothorax. He advocated resection of the rib to facilitate the drainage in suppurative pleuritis. Whether in operative work or in the liberation of pus he made free incisions. He was among the first in the cure of aneurism of the vertebral artery. In the surgery of the arteries he was an expert. During fourteen years of his work at the Charity Hospital, he labored without an anesthetic. Realizing the difficulties under which he labored, he was ready to welcome the new era in surgery then about to dawn. The lives of many men are mirrored in their books and published papers, but the writings of Dr. Stone give but meager knowledge of his work, or his position as an authority on surgery in the South. No man in the profession of Louisiana was ever so universally beloved as Dr. Stone. In his relations with other physicians he was gentle and considerate; never intrusive or aggressive. Many of the physicians in Louisiana to-day who knew him in life, speak of him affectionately as "Old Stone," and always with some expression of endearment and respect. His position in New Orleans may be compared with that of Physick in Philadelphia, Mott in New York, Lister in London, and Velpeau in Paris.

DR. J. B. S. HOLMES, of Atlanta, read a paper,

GONORRHEA IN WOMEN.

He said there was no disease that affected women that should engage the serious and thoughtful consideration of the physician more than gonorrhea. The author then, after quoting Tait and Sinclair on gonorrhea, said he had no doubt but that many of the chronic diseases of the ovaries and tubes that came under the observation of gynecologists were due to this disease. In the majority of cases the poor woman was ignorant of the fact that she had had or has any specific disease. Indeed, her husband might tell the physician that months or even years before his marriage he was a subject of gonorrhea, which was cured and had since shown no evidence of a return. The essayist could conceive of nothing more dangerous than curetting the uterus in the presence of immense pus tubes with pelvic adhesions. The drawing down of the organ necessary for curettage may break up pelvic adhesions and pour out the contents of pus sacs into the peritoneal cavity, which would result in the majority of cases in death to the woman. If her life is saved at all, it will only be done by a prompt abdominal section, with thorough irrigation and drainage of the abdomen. Then why not, in the first instance, when pus is detected, promptly remove it by surgical interference? We then treat the woman rationally and give her the very best and only chance of relief and restoration to health.

DR. GEORGE J. ENGELMANN, of St. Louis, called attention to the importance of differentiating between latent or chronic gonorrhea and the acute form of the disease. He does not look upon acute gonorrhea as a dangerous disease in women, but he does the latent or chronic form. He has not seen serious results from the acute form, but it is the infection which is not observed from a supposedly cured gonorrhea in the male which produces the suffering in women.

DR. BEDFORD BROWN, of Alexandria, Va., took exception to the statement made by Dr. Engelmann in regard to the non-danger of acute gonorrhea in females, and cited the case of a female in which acute gonorrhea ran its course, terminating finally in fatal nephritis. In this case there was first urethritis, then cystitis, ureteritis, pyelitis, and acute nephritis.

DR. RICHARD DOUGLAS, of Nashville, thought Dr. Engelmann had sounded the key-note in that there is quite a difference in the infection from acute gonorrhea and the latent

form of the disease. Infection from the latter was a mixed infection, not only with the gonococcus, but with the streptococcus and staphylococcus also, and that accounts somewhat for the virulence of the trouble. That gonorrhea is the cause of uterine fibroids, he could scarcely accept, although he thought Dr. Price was the author of that idea.

Dr. Joseph Taber Johnson, of Washington, D. C., said in the treatment of pus tubes the result of gonorrheal infection, the very radical suggestion of Dr. Holmes was correct, viz., to resort to abdominal section, as he was satisfied that gonorrheal pus tubes were incurable by conservative measures. In addition to the removal of pus tubes, if present on both sides, the uterus should be removed also, because it is through the infected mucous membrane of the uterus that the tubes themselves have become infected.

Dr. William P. Nicolson, of Atlanta, said the general surgeon was concerned in the treatment of gonorrhea as well as the specialist. We are told that a urethra has been inflamed and subsequently restored to its normal condition, and yet years afterwards the man transmits gonorrhea to his wife. It is hard for him to accept such a doctrine. If a man goes for months and years with a gonorrhea absolutely producing no effect whatever, if he is not well, how are we to tell him that he is not? We are told by the essayist that gonorrhea is contracted by the female when there is absolutely no evidence whatever of disturbance in the urethra of the male, or that there is no trouble by which he can propagate disease.

Dr. A. M. Cartledge, of Louisville, thought the essayist failed to differentiate between cases of subacute and chronic salpingitis and the cases of acute infection from gonorrhea. He threw out the suggestion that physicians were not fully conscious of the great prevalence of artificial abortions in young married women of the better as well as lower class, and he believes that in these cases of secondary infection from pathogenic organisms we have a more fertile source for the development of tubular and ovarian disease than from gonorrhea.

Dr. W. E. B. Davis, of Birmingham, Ala., considered the disease a dangerous one. The views of Tait, however, in regard to gonorrhea were extreme. We have a frequent cause of tubal disease in the puerperal state, in delivery at term or in premature deliveries, frequently in artificial abortions, brought about by mechanical means. More or less infection occurs after all cases of abortion, but if the patient is in good condition at the time, she will not be materially affected. If we have a soil that is favorable for the development of septic germs we will get a severe inflammation—a mixed infection.

Dr. W. D. Haggard, of Nashville, desired to place himself on record as opposed to the removal of the uterus and tubes for pyosalpinx as the result of gonorrhea, believing that by dilatation and judicious curetting, patients can be relieved of an endometritis produced by gonorrhea.

Dr. John D. S. Davis, of Birmingham, Ala., emphasized the importance of using the microscope in connection with gonorrhea and carefully examining the pus. Experience has demonstrated that the latent effects of gonorrhea were not always directly due to the gonococcus *per se*, but to a mixed infection; that is, we have an inflammation as a result of the gonococcus, which is fired up by another infection from the streptococcus. When we have a mixed infection we have as a result pus tubes, suppurative peritonitis, and finally death of the patient if surgical interference is not resorted to.

Dr. Hunter McGuire, of Richmond, entered a protest against the doctrine that a man can have gonorrhea and not get well. As for the idea that a man who has had gonorrhea should not get married, it is preposterous. He had seen thousands of cases get well and remain so.

Dr. Holmes, in closing, said he was aware that many cases of acute gonorrhea resulted in no secondary trouble, because they were recognized early and cured by judicious treatment. He wished to be understood as not indorsing the views of Mr. Tait, that gonorrhea in the male was never cured, but he insisted that general practitioners were often too careless in advising patients to get married who have been the subjects of gonorrhea.

SOME CASES OF ACUTE INTESTINAL OBSTRUCTION, WITH DEDUCTIONS

was the title of a paper read by Dr. A. Morgan Cartledge, of Louisville, in which he reported six cases, three of which terminated fatally. The author said that the limited number of operated cases reported in his paper, together with an individual observation of probably as many more not subjected to operation, conform to the accepted belief of the hopeless nature of acute intestinal obstruction unless treated by early laparotomy. While the author does not contend that we can dispense with opium in the treatment of these cases, certainly where obstruction is in the least suspected we should withhold its use until a diagnosis can be made. Certainly the practice of masking every abdominal condition characterized by pain with opium is far too prevalent, and its practice gains additional calamity as surgery advances in knowledge which offers relief of these very conditions concealed by the cloak of opium and ignorance. The practical and cardinal points in avoiding a fatal delay and making an early diagnosis, are to be found in: Sudden abdominal pain; a rapidly accelerating pulse; the vomiting of much more fluid in a given time than is taken by the mouth; the green-tinged character of this fluid; the anxious expression of countenance when no opium has been used, the fact that although enema may be stained by the contents of the colon there is no expulsive movement of the bowels, and the passage of no gas. The burning question now is to educate men to know that action to be successful must be quick; that timely aid depends upon the man who first sees the case; that when a physician from any reason suspects that a patient's bowels will not move, he should drop everything else and center all his time and attention upon that patient. He should not waste his gray matter by trying to determine if it be a probable intussusception, volvulus, band, diverticulum or what not—leave that for the operation to determine; it is the most reliable way to find out.

In the afternoon, the members of the Association were taken on a special train to Professor Shephard's tea plantation and to the Forest Inn.

Second Day—Morning Session.

Dr. F. W. McRay, of Atlanta, Ga., read a paper entitled

HERNIA OF THE DIAPHRAGM WITH REPORT OF A CASE.

The author brought this subject before the Association for consideration, not alone because it offered an inviting field for experiment and investigation, but also because of a recent interesting case where, without warning, he was forced to meet the emergency without time for research into the literature of the subject; and while he was not then sustained by a knowledge of the opinions of the leading authorities, he finds from subsequent investigation that the course pursued was in accord with the recommendations of such eminent authorities as Laennec, Bowditch, Guthrie and Marcy. In the case reported, strangulation had occurred five days prior to the doctor's visit. Had an early diagnosis been made, he feels sure the strangulation could have been relieved and the patient's life prolonged. The opening in the diaphragm was accessible, and he believes it could have been closed with a fair chance of permanent recovery. The case serves to emphasize the necessity for early operation in all cases of acute obstruction of the bowels.

Dr. Louis McLane Tiffany, of Baltimore, Md., read a paper entitled

GUNSHOT WOUND OF THE SPLEEN AND KIDNEY—ABDOMINAL SECTION—HEMOSTASIS BY DEEP SUTURE—RECOVERY.

The patient was a male negro, 20 years of age. Two hours previous to entering the University Hospital, March 21, 1894, he had been shot with a small caliber rifle from a distance of twenty feet, the weapon being directly behind him, and he being erect. His urine was slightly albuminous; the pulse, temperature and respiration normal. There was a bullet wound three inches to the left of the spine just below the last rib, from which blood oozed. After properly cleansing the wound it was enlarged, and it was found that the kidney had been injured and that a bullet had passed onward, presumptively into the peritoneal cavity. The wound was filled lightly wiih gauze by the resident physician, and Dr. Tiffany was notified. External examination of the abdomen by touch and palpation revealed nothing, not even painfulness. The patient was anesthetized, laid on the belly, and the wound after being enlarged was examined. The upper portion of the left kidney was perforated, and dark blood flowed from the peritoneal cavity beyond. This large wound was filled with gauze, the patient turned on the back, and the abdomen freely opened along the left semilunar line. A moderate amount of blood was free in the peritoneal cavity; no wound of the intestine could be discovered, but the spleen was found perforated, blood flowing freely from the wound of entrance, as well as from the wound of exit; the latter wound, in the concavity of the organ, was slightly the larger of the two. The perforation

through the spleen was about three inches from the free lower border. Unwilling to subject the patient to splenectomy, the essayist attempted to arrest the bleeding in the following manner: A long needle threaded with silk was passed entirely through the spleen, central to and parallel with the bullet track; the long ligature was then tied over the free border of the organ so as to press the surfaces of the wound together tightly enough to arrest bleeding, yet not to tear through the splenic tissue; the ends of the ligature were cut short, the peritoneal cavity cleaned by copious irrigation with hot water and the abdominal wound closed. The kidney was tamponed with gauze through the dorsal wound. Convalescence was uneventful; the anterior wound healed by primary union; urine flowed freely from the dorsal wound for two days only, union by granulation taking place. The patient left the hospital well, April 22. In this case, the wound being small, hemorrhage was not profuse, and no abdominal organ save the spleen was wounded.

DR. WILLIAM PERRIN NICOLSON, of Atlanta, Ga., next presented a paper upon the report of a

SEVERE CASE OF NÆVUS

which was cured by the use of galvano-puncture. The case was one of a large growth occupying the groove from the angle of the jaw, up to and covering a portion of the ear, and extending out upon the cheek, the entire tumor being almost the size of a hen's egg. Dr. Nicolson formulated the following conclusions as having been reached in the long period covered in the treatment of this case:

1. That while this treatment may not be applicable to all cases, in many of those that are reached by difficult dissection, and are subject to dangerous hemorrhage, as well as an unsightly looking scar, this is undoubtedly to be preferred to any other surgical proceeding. The time required in a cure is more than balanced by the entire preservation of the skin and the absence of danger from operative work.

2. That as to the quantity and quality of the current to be employed, as many as six cells of a zinc-carbon battery may be sufficient in small growths, while twelve cells of the same is perhaps the maximum to which it should be carried if the current from the positive pole alone should be employed.

3. The method of applying needles. Various forms of needles may be employed, but the ordinary steel needle gives equally satisfactory results, as the eschar produced in the skin at the point of entrance is not sufficient to amount to anything and the needles can thus be changed at each sitting. That only one of them should be inserted into the tumor, while the negative pole should be attached to a sponge electrode moistened with a salt solution, and placed upon some indifferent point, care being taken to remove it from point to point in order to prevent blistering the skin.

4. Method of attacking the tumor. Better results are obtained by passing the needle in from a periphery of the growth on a line horizontal with the skin, and in directions radiating from the circumference towards the center. Several of these punctures should be made at each operation. The length of the entire sitting should not extend to more than twenty minutes or half an hour, while intervals of two to three weeks, or longer, should be left between operations to know whether there may not be a progressive shrinking away of the tumor.

5. As to the method of cure. He thought that several elements entered into attaining the result, of which the coagulum of the blood was one, and perhaps the least. The two remaining elements were the subsequent contractions of the small eschar produced in radiating lines from the tumor, and the effect of the current upon the vasomotor nerve supply. He felt sure that a thorough trial of this method as to the settling of the various points considered, would result in its adoption in the treatment of perhaps a large majority of these cases where we have a large elevated blood tumor with which to deal. He also believed that perhaps pricking the surface with the needle attached to a positive pole of the battery, might result in a series of small scars, which would result in removing the ugly port wine marks so common in this trouble.

OPERATION FOR COMPLETE PERINEAL LACERATION.

This paper was read by DR. JOSEPH PRICE, of Philadelphia, in which he said that there are many men who, essaying to be authorities on the surgical diseases of the major order, have no conception whatever of injuries of the perineum and cervix so far as their intelligent repair is concerned. Indeed, there are many with a large obstetrical practice, who labor under the delusion that they have never ruptured a peritoneum, and that all their patients have entirely normal perinea. This misconception is due to improper teaching more than to any other cause. Perineal lacerations, unless extending through the skin to or through the sphincter, may escape detection unless by thorough digital examination. All these tears should be approached as distinct surgical lesions to be repaired in the line of their anatomic destruction, and not as cosmetic operations, whose object is to obtain superficial appearances without regard to perfection and utility. Heaping up of tissue outside the lines of resistance and tension, or mere thickening of mucous membrane and skin does not make a true perineum, neither does a set of outside sutures, however much they may draw the parts together, afford any anatomic counterpart of a perineum. From this basis all the so-called outside flap splitting operations for perineal tears are only puckering operations, bringing parts within the sutures that have never been severed, and in many cases taking them out of their proper relations. Big sutures, heavy ligatures, clumsy instruments have no more place here than in other surgery. The ordinary short strong sewing needle, fills the bill exactly in most cases, though the Emmet strayfine short needle for general use is preferable. Silkworm gut or silver wire is the preferable suture. The Emmet operation as originally suggested, and afterwards modified by its distinguished devisor, is the foundation for all successful operations on the lacerated perineum, either with or without sphincter tear. Dr. Price, in closing, said the tears of perinea are often unavoidable, but their restoration is always possible, and their neglect is criminal.

After the reading of Dr. Price's paper, Dr. Engelmann took the Chair and PRESIDENT KOLLOCK delivered his

ANNUAL ADDRESS.

He first thanked the Association for the honor conferred upon him in electing him President. He then alluded to the death of Drs. William T. Briggs, of Nashville, and A. B. Miles, of New Orleans. Dr. Briggs' life had been one of usefulness. He had done excellent and remarkably brilliant work, and had achieved an enviable reputation. Dr. Miles, who had been made Professor of Surgery in Tulane University, was a man full of youthful activity and manly vigor, who by patient study and diligent research, aided by a brilliant intellect, had won for himself a high position in the profession, and in the estimation of his fellow men. "To know him was to admire and love him." His life was gentle and the elements so mixed in him, that Nature might stand up and say to all the world, "This was a man."

While in all branches of gynecology good progress had been made, he noted with pleasure that surgery had had its triumphs. Many reports of cases show enlarged experience and continual improvement in the treatment of appendicitis, hernia, intestinal obstruction, and many other ills that flesh is heir to.

OBSERVATIONS ON THE ACTION OF CHLOROFORM ON THE FUNCTIONS OF THE HUMAN BRAIN AND SPINAL CORD, AS WITNESSED IN EXTENSIVE INJURIES OF THE CRANIUM AND BRAIN.

DR. BEDFORD BROWN, of Alexandria, Va., read a paper on this subject. Dr. Brown cites the history of two cases of extensive compound comminuted fracture of the os frontis and serious injury and destruction of a portion of the frontal lobes of the brain as the basis of his paper. One of these cases of injury was caused by the kick of a newly shod horse, the other by a spent grapeshot in battle. The subjects of both of these injuries retained perfectly their powers of consciousness and sensation. The history of the first case was published in the October number of the *American Journal of Medical Sciences*, 1860, and occurred in the summer of that year. The fracture in that case involved a large portion of the os frontis. The fractured bones were driven back into the substance of the brain quite an inch in depth, lacerating the frontal lobes extensively. There was a loss of about two tablespoonfuls of brain. During the operation, which lasted more than an hour, the patient was placed under a compound of chloroform three parts, ether one part, four different times. Through this large opening in the skull the brain could be seen clearly and its varying changes of action under chloroform could be observed perfectly. The invariable action of the anesthetic was to suppress hemorrhage, to quiet cerebral pulsation and to positively reduce circulation in the brain and arterial tension. These peculiar effects were observed as many as three or four different times. When the patient was threatened with collapse from chloroform, stimulants injected in the rectum produced increased circulation and arterial tension in the brain promptly. Any struggling, mental excitement, or resistance while inhaling

chloroform caused marked increase in cerebral circulation and pulsation with increase of hemorrhage.

The second case was that of a Confederate soldier, who in battle received a spent grapeshot in his forehead, causing an extensive compound comminuted fracture of the os frontis, driving the fractured bones back more than an inch into the frontal lobes. The wound in the skull was quite two inches in diameter, and more than an inch in depth. This patient was subjected to chloroform three times during the operation which lasted an hour. The action of chloroform on the functions of the brain in this was similar to that in the first. When under full anesthesia each time the cerebral hemorrhage ceased, the cerebral pulsations diminished to a mere tremor, and the arterial circulation was markedly reduced. This occurred three different times during the operation. The action of alcoholic stimulants resorted to in this case to prevent collapse from chloroform increased the cerebral pulsations and circulation in a positive manner.

HYDRO-PYONEPHROSIS—SUCCESSFUL REMOVAL OF A FORTY POUND TUMOR OF THE KIDNEY.

By Dr. Joseph Taber Johnson, of Washington, D. C. The patient was 63 years of age, and had inherited and possessed until five years ago a remarkably good constitution. At this time a lump appeared in his right side in the region of the liver and was supposed up to the date of the operation to be caused by enlargement and abscess of that organ. This lump slowly increased in size and the patient had gradually lost flesh and strength until the date of the removal of the lump, when he could not have weighed more than 80 pounds. At no time did he suffer from pain, and only a few weeks with fever. There were several points of interest in this case, viz., failure of a number of good men to make a diagnosis, though the patient was under observation for nearly five years. Failure of repeated examinations of the urine to detect the slightest evidence of disease of the kidney. The only explanation the writer suggests is that the disease at the time of analysis and subsequently had so destroyed the function of the kidney as to prevent the escape of any urine at all, and that the specimen examined came from the other organ, which fortunately was healthy. Failure of such large quantities of foul smelling pus to produce more sepsis. Absence all through the history of pain or fever. The median line incision, the separate ligation of the renal vessels, and the ligation and dropping of the ureter.

The writer is aware that the lumbar incision is preferred by nearly all nephrectomists, and that they frequently bring out the cut end of the ureter and fasten it to the abdomen. While the lumbar incision may be best in small tumors and other disease of the kidneys it certainly could not have succeeded, the author believes, in a case of the magnitude of the one here reported, not only on account of its great size, but also on account of its being so extensively adherent to the omentum and abdominal wall. The colon had to be carefully separated from the anterior surface of the tumor.

Dr. W. L. Robinson, of Danville, Va., read a paper entitled

REPORT OF CASES.

He reported two gunshot wounds of the abdomen, lacerating the liver and bowel. In neither case were the symptoms commensurate with the injury; neither shock, hemorrhage, nor pulse portrayed the necessity for operation. Yet in view of the 92 per cent. mortality of gunshot wounds of the abdomen without operation, he did not hesitate. The first case came so near dying on the table, and his light being imperfect (at 12 o'clock at night) he only found the liver wound, failing to find the hole in the posterior border of the hepatic flexure of the colon. The patient died in three days. His second case was operated on promptly, and the injury in the transverse and descending colon was promptly repaired with the Murphy button. The man was on a spree and had had no action from the bowels for three days. He pressed out much fecal matter, but should have taken more time and ruptured the bowel as far as practicable. For two days no unfavorable symptoms presented themselves, but on the night of the second day tympanites and pain began. He suggested to his associates the propriety of reopening the abdomen, but enemata and grain doses of calomel were tried. This, the author considered, was his fatal mistake, for the waiting of ten hours had lost him the chance of a life-saving operation. He reopened and with medium trocar emptied the bowels of gas, but exudative lymph was manifest on bowels, and obstruction of button by feces existed. The button held its tissue firmly, and no eakage had occurred. He washed out the cavity, but patient died in ten hours of shock.

MOVABLE KIDNEY.

This paper was read by Dr. Geo. Ben Johnston, of Richmond, Va. At the outset the author emphasized three propositions: 1, movable kidney is extremely common; 2, it is capable of producing very distressing symptoms, and in many instances is a menace to life; 3, it is curable by a simple and safe operation. The author's own experience with movable kidney from a surgical standpoint extends back a little more than three years. Prior to the first nephrorrhaphy, which he performed in May, 1891, those cases he had met with were given little or no thought. Since the date mentioned, he has looked with more interest on his cases, and has come to marvel at the frequency of the malady. He has examined a limited number of persons likely to be the subjects of movable kidney since his first operation for its relief, and in a comparatively small number of subjects he has encountered twenty-seven cases. Edebohls, who has studied 500 cases fixes the rate at 1 for every 5 or 6 women examined. Linder gives about the same rate. Osler makes no statistics, but mentions it as a common occurrence in his hospital wards. The records of these observers and Dr. Johnston's cases justify the assertion that it is a common malady. It occurs more often in women. He had never seen one in a male subject. Age is a factor in its production. His own cases have been in subjects varying in age from 20 to 35 years. In only one instance has he seen it in a woman over 40. Both kidneys may be movable at the same time. The right is the one that is affected in the preponderating majority of the observed cases. This is accounted for by the relation of the kidney to the liver on this side. Two anatomic facts help to explain the preponderance of the right over left kidney displacement: 1, the greater length of the right renal artery; and 2, the firmer attachments of the left kidney. The author has twice seen a movable kidney follow obstruction of the ureter. It happened that both of these cases were on the left side. The increased weight of the kidney due to accumulated urine and congestion must have played an important part in the etiology of the dislocation in these two cases. In many cases of movable kidney, there are no symptoms. In others, the symptoms are extremely distressing, producing great mental disquietude, as well as intense physical suffering. In a proportion of cases the symptoms are grave. Torsion of the ureter is common, partial occlusion by bending is not uncommon, inducing a distension of the pelvis by dammed up urine. Hydronephrosis may follow. Calculus is thus invited by reason of poor drainage. Apart from tumors of the kidney itself, the condition most likely to be mistaken for movable kidney is distended gall bladder.

Nephrorrhaphy is not indicated in every case of dislocated kidney, but only in such cases as manifest distressing or dangerous symptoms. When gastro-intestinal disturbance impairs the general health, when nervous symptoms are severe, when the dragging abdominal pains are constant, when disease of other organs is simulated, when hydronephrosis is threatened, when one or more attacks of torsion have occurred, the operation is imperative. The author then outlined his method of operating on movable kidney, and closed his paper with a report of seventeen cases.

Dr. Richard Douglas, of Nashville, followed with a paper entitled

ACUTE PERITONITIS.

Appreciating the condition under which the colon bacillus may escape from its natural habitat and become actively pathogenic, and knowing the supply is unlimited, the dose being governed alone by the integrity of the bowel, naturally we accord to this bacillus the first place in the causation of peritonitis. In obedience to the teachings of experimental work, the surgeon must accept the classification of Pawloski of two forms of peritonitis: 1, that produced by chemic agents with which we are not concerned; 2, that produced by infection. The latter is more tangible. It is fully in accord with our ideas of the genesis of the disease. It harmonizes with clinical work. With Mordecai Price, the author agrees that every case of general peritonitis has a demonstrable cause, and that cause is septic in character. Pathologic manifestations of peritoneal infection are subject to many variations which, in a great measure, indicate the violence of the poison and guide us in forming a prognosis, but to simplify matters, the author considered it under two heads, which illustrated the microscopic and macroscopic changes the result of general peritonitis.

It is an indisputable fact that the type and virulence of the inflammation are largely dependent upon the origin

hence in our bedside work we may consider the subject under the following etiologic classification:

Infection from without.	Immediate	This is the direct infection of the peritoneal membrane through penetrating wounds of the abdomen, either accidental or surgical.
	Mediate	This form embraces all cases of contamination of the peritoneum occurring from extension of adjacent infected areas, as leakage from mural abscesses, or puerperal infection.
Infection from within.	Immediate.	Visceral perforation or rupture and direct inoculation of the peritoneal membrane with escaping contents, as in perforating typhoid or gastric ulcer, appendicitis, or rupture of gut or bladder.
	Mediate.	Infection by emigration of micro-organisms through visceral wall of impaired resistance as in incarcerated hernia, intestinal obstruction, ruptured ovarian cyst.

The author then reported a few illustrated cases. One case was reported of general purulent peritonitis. The patient recovered and the author considers that it was due entirely to free incisions, thorough irrigation and ample drainage.

THIRD DAY—MORNING SESSION.

HISTORY OF VAGINAL EXTIRPATION OF THE UTERUS.

DR. GEO. J. ENGELMANN, of St. Louis, read a paper on this subject, in which he stated that at the New Orleans meeting of the Association he was deeply interested in vaginal hysterectomy, which he presumed was a comparatively new operation with very recent modifications; but Dr. Lewis, of that city called his attention to an old French pamphlet, showing that the operation had been done in the '20's. Since then he had found it was done still earlier precisely as it is done to-day, the operation having developed step by step.

DR. LEWIS, of New Orleans, in the discussion stated that the first vaginal hysterectomy was performed by Dr. Dabourg in the little town of Autell, France.

DR. EDMOND SOUCHON, of New Orleans, read a paper entitled

REMINISCENCES OF DR. J. MARION SIMS IN PARIS.

In 1860, Dr. Souchon had just entered into the study of medicine in Paris, and was attached to the service of Professor Velpeau. In the spring of the following year, he by accident met Dr. Sims who had come to Paris with a letter to Velpeau from Valentine Mott, of New York. At this time Dr. Sims knew nobody in Paris and could not speak a word of French, so that the meeting of young Souchon was a very great help to him in his intercourse with Velpeau and the other surgeons of the French capital. Sim's great object was to get a case on which to demonstrate the success of his operation for vesico-vaginal fistula. Velpeau procured a case which Sims operated successfully before a large audience of students, doctors and professors in the operating theater of the old Charitè. The ovation Dr. Sims received was very great and gave him the start that made him the universal surgeon we all know him to have been. Wherever he traveled and located he had more calls than he could attend to. This success, however, was not without hard moments, for twice he met cases that came very near terminating disastrously from the effects of chloroform. But their final recovery only increased the admiration of all for his fine qualities as a surgeon. Dr. Souchon relates in his paper several instances of Dr. Sims' generosity and gives a graphic account of the generous and sublime manner in which Dr. Sims came to his rescue in a trying moment of great distress. Dr. Souchon's paper ends in words of highest praise, enthusiasm and love for the great and good man, Dr. Sims.

DR. GEO. H. NOBLE, of Atlanta, Ga., read a paper entitled

A CASE OF CARCINOMA OF THE PARTURIENT UTERUS, REMOVED THREE DAYS AFTER CONFINEMENT—RECOVERY.

The specimen presented was one of carcinoma of the parturient uterus removed by vaginal hysterectomy three days after labor. The woman had previously been confined, sustaining a laceration of the cervix uteri, which perhaps was a factor in the cause of the disease. In the first few months of the last pregnancy the patient was treated locally by her family physician; but there was nothing to cause a suspicion of malignancy. Almost the entire vaginal portion of the cervix was destroyed, less than one-fourth of its circumference remaining intact. The induration extended deep into the uterine tissue, but could not be felt beyond the limits of that organ. The roughened ulcerated surface was easily traced for a considerable distance within the cervix, the os being dilated to about five centimeters in diameter. Her condition was unpromising, and surgical interference was clearly interdicted, so the os and vagina were cleansed thoroughly and lightly dressed with gauze. She was then placed profoundly under the influence of morphia sulphate with a view to arresting labor, securing rest, and recuperation sufficient to permit evacuation of the uterus, which occurred spontaneously twelve hours later. The child was poorly nourished and lived only a few weeks, finally dying of inanition.

What is the advantage of hysterectomy over Porro's operation, and if hysterectomy is preferable should the vaginal or abdominal method be given precedence over the other? To the first question the author answered that hysterectomy undoubtedly promises more to the mother than a Porro operation in cases where the disease is confined to the uterus, and he asserts that when the cancerous mass can be successfully removed, it is the duty of the surgeon to do it, as Porro's method merely bridges the woman over the puerperal state and leaves her to her fate. In radical removal there is a promise of cure.

In answer to the second question, the author said it is evident that the method of operating must depend largely upon the character of each individual case. Thus the vaginal operation may be done when it is desirable to take advantage of the diminished liability to shock, even though the large size of the uterus may render the operation more tedious. The main point in the paper was to show the feasibility of hysterectomy in the puerperal state for cancer of the uterus, as the case reported clearly demonstrated, even though it is too early to claim immunity from the return of the disease.

LIGATION OF ARTERIES

By DR. JOHN A. WYETH of New York. The author said that in August, 1894, in an operation for the removal of a malignant neoplasm of the left upper jaw, which involved the spheno-maxillary fissure and part of the orbital cavity, it became necessary as a preliminary operation to ligate the external artery. In cutting down upon this vessel by the usual incision—the point of bifurcation of the common carotid artery being, as demonstrated by him in a study of 121 subjects, opposite the upper border of the thyroid cartilage—he found quite a network of veins crossing from the median line of the neck to the internal jugular immediately over the point of ligation, and spreading from one-half an inch above down to the bifurcation of the common carotid. As it would have taken some time to apply a double ligature to each one of these veins, and as the author, on account of the bad general condition of the patient desired to expedite matters as much as possible, he resorted to this expedient: By catching hold of the sheath of the common carotid and at the same time making gentle traction upon the lowermost of these veins with a blunt hook in an upward direction, he found that with his aneurism needle, armed with a good-sized catgut ligature, he could slip this instrument around the artery just in the crotch of bifurcation of the common into the external and internal carotids. Having every confidence in the healing power of arteries ligated under aseptic conditions, especially those tied with animal ligatures—in preference catgut—the ligature was applied at this point, and immediately tightened. It was so close to the common trunk that it also occluded the superior thyroid branch which is given off as a rule just at this point, and which he saw within the grasp of the ligature as he tightened it. The wound was immediately closed without drainage and sealed by iodoformized collodion dressing. The operation on the jaw was completed with an insignificant loss of blood, and on the fifteenth day after the operation the patient left the private infirmary in New York City for his home in the western part of the State. There was no hemorrhage following this deligation. About five years ago, in a similar operation, a ligature was applied at this point with equal success. The speaker did not relate these two cases for any bearing they might have upon the safety of ligation of the external carotid artery, since that question had long been settled. But the reason for narrating these two cases was to bring before the Association a consideration of the inflammatory changes which occur in arteries which have been ligated, and to discuss at length the best methods to pursue in these operations to secure the greatest safety to the patient. In tying arteries, an important point to consider is the selection of a ligature. It seems to the author that in the animal ligatures, and especially in well prepared and

properly asepticized catgut is found the best ligature material. For the last ten years he had used catgut almost without exception, only once or twice using silk, and then in the ligation of the large venous trunk close to the root of the neck, in which he was fearful that the animal ligature might slip, from the blood pressure in the act of vomiting, as the patients came out from under the influence of the anesthetic.

Porta in four hundred experiments, found that in from one to two years, 70 per cent of catgut ligature had become absorbed; 36 per cent., of silk, 66 per cent. of hemp or flax, and 20 per cent. of horse hair. Order of rapidity; catgut, hemp, silk, horse hair.

SIMULTANEOUS APPEARANCE OF CANCER IN BREAST AND UTERUS.

This paper was read by DR. JAMES EVANS, of Florence, S. C. The subject of this interesting manifestation of the disease was a lady 53 years of age, married and the mother of six children. A striking peculiarity in the history of the case, was, that when the disease was most active and destructive in the breast, it rather checked and retarded its tendency in this direction in the uterus. Excision of the cervix and removal of the breast were proposed, but declined. The author closed by saying that although there is a very general consensus of opinion among surgeons that the most successful treatment of cancer affecting the breast and uterus is early and radical removal by the knife, yet it is doubtful in the opinion of the author if operation is advisable when the disease appears in multiple form and in distant organs. When the disease is confined solely to the uterus and recognized at an early stage of its invasion, the prompt removal of the organ is usually followed by permanent recovery; in fact, recurrence less often takes place than removal from any other organ or part of the body.

DR. W. E. PARKER, of New Orleans, reported seven cases of

VARICOCELE

treated by incision, ligation and shortening of the scrotum. An incision, varying in length according to the size of the varicocele is made, and the scrotum shortened by converting the wound from a longitudinal to a transverse one. All cases recovered with union by first intention, and are still doing well, the period since the first operation being seven months. At the conclusion, he gave the following general indications for the treatment of varicocele: The milder forms should be treated with a suspensory bandage with proper attention to diet, exercise and bowels. A varicocele should be operated upon: 1, if it is of large size; 2, if it is painful; 3, if marked nervous symptoms be present; 4, if the testicle is atrophying; 5, if the varicocele is increasing rapidly; 6, if it is an obstacle to entering a public service; 7, if, on account of a patient's occupation, a suspensory is troublesome and he desires an operation.

DR. RUFUS B. HALL, of Cincinnati, Ohio, read a paper entitled

FIBROID TUMOR OF THE UTERUS WITH SUPPURATING OVARY DISCHARGING PER RECTUM.

As a preface to his report, Dr. Hall said the subject of operative treatment for fibroid tumor of the uterus is one in which the keenest interest is manifested by men engaged in abdominal surgery. The main points in the technique of the operation have been practically settled, but certain minor details in operative procedure are capable of improvement. Complications occasionally arise, which tax to the utmost the skill of the operator. The following case was reported in detail, as illustrating a number of these complications: The patient, aged 44, was known to have a fibroid tumor for five years. She had suffered from sepsis for five weeks previous to the operation. In addition to the fibroid tumor was a large suppurating ovary holding about two pints of pus, which was discharged per rectum every eight or ten days. The suppurating ovary was densely adherent, and after its removal disclosed a large opening in the rectum. The operation included total extirpation of the fibroid uterus with the suppurating ovary, and repair of the intestinal rent. There was no leakage of the injured bowel after the operation. The patient recovered.

The Doctor drew the following conclusions: The question of operation during sepsis is one that will admit of discussion both *pro* and *con*. but in the end it must be decided by the merits of the individual case and not by rule. As to technique, total extirpation was given the preference, as it gives the ideal condition both theoretically and practically for after treatment. The Baer method was condemned as it does not give thorough drainage—a thing absolutely necessary where there are extensive raw surfaces which have been bathed in pus, and no peritoneum to close off the general peritoneal cavity. The strengthening of the suture line with a tag of adventitious tissue was advised. The packing of the pelvis with gauze to protect the cavity from intestinal leakage should any occur, and to prevent intestinal adhesions, was recommended. The gauze is usually removed on the fourth day and peroxid of hydrogen used as a wash for the cavity several times daily. Again, forcible dilatation of the sphincter ani muscle to cause incontinence, thus relieving the intra-intestinal pressure from accumulating gases, the Doctor says, adds greatly to the chances for recovery. He first employed it for this purpose on Feb. 6, 1893, in an operation for extra-uterine pregnancy with extensive bowel injury, the patient recovering. He says, so far as he knows, he is the first man to practice forcible dilatation for this purpose.

DR. J. G. EARNEST, of Atlanta, Ga., contributed a short paper in which he reported some complicated cases of pelvic surgery. Two cases were detailed simply to illustrate a method of treatment that under certain circumstances is safer for the patient and just as apt to give relief of symptoms as total extirpation of the tumor; also to emphasize a growing conviction the author has, that intestinal adhesions are frequently tinkered with when it would be best to leave them alone. The essayist was no advocate of timid or imperfect surgery, but in cases where the tumor can be effectually dealt with without disturbing old, thoroughly organized adhesions, which the history and condition of the patient clearly show to be harmless, and in view of the fact that if those adhesions are loosened they will almost certainly anchor at some other point where they may be a source of constant annoyance, or even produce a fatal obstruction of the bowel, he believes it best to leave them undisturbed.

THE REMOVAL OF AN INTRA-UTERINE FIBROID TUMOR BY MORCELLEMENT WITHOUT HEMORRHAGE.

DR. HERBERT M. NASH, of Norfolk, Va., read a short paper on this subject. In September, 1892, he saw in consultation Mrs. A., aged about 42 years, the subject of intractable homorrhages from the uterus, lasting from two to three weeks of each month, and which had been habitual for several years. The uterus could be plainly felt above the pubes, and by the conjoined method, sound and so forth, the diagnosis of intrauterine fibroid was made. Not wishing at that time any radical procedure, she continued under the care of her physician, whose best efforts to control the hemorrhage proved fruitless. On July 11, 1893, she entered the hospital for surgical treatment. On August 26, the essayist operated under ether. It was found quite impossible to dilate the os to the extent desired, but there was room enough for manipulation without dividing the cervix, and no difficulty was found in seizing the presenting mass—the attachment of which to the uterine walls had been made out to be sessile—with a strong volsellum. Upon making traction with some force, in order to determine the best method of procedure, the tissue gave way, and the withdrawn part of the detached mass was quite large, but no bleeding followed. This fact decided the Doctor to proceed by morcellement, and with the forceps, scissors, and the instrument he exhibited, the whole growth was removed piecemeal, and with only a slightly colored serous discharge. The previous packing had been so effectual that the growth itself, and indeed the uterine walls appeared to have been exsanguinated. The fragments removed, when under strong compression, presented a mass of fibroid tissue nearly as large as an ordinary cocoanut. When the patient left the hospital, the uterus had contracted firmly and measured a fraction over three and one-half inches in depth, occupied its proper position in the pelvis, and the patient is to-day entirely well with perfectly normal functions.

The following officers were elected:

President, Dr. Louis McLane Tiffany, of Baltimore, Md.

First Vice-President, Dr. Ernest S. Lewis, of New Orleans, La.

Second Vice-President, Dr. Manning Simons, of Charleston, S. C.

Treasurer, Dr. Richard Douglas, of Nashville, Tenn.

Secretary, Dr. W. E. B. Davis, of Birmingham, Ala.

After introducing and adopting resolutions of thanks, the Association adjourned to meet in the City of Washington, D. C., the second Tuesday in November, 1895.

Blank Applications for membership in the ASSOCIATION at the JOURNAL office.

Mississippi Valley Medical Association.

Abstract of the Proceedings of the Twentieth Annual Meeting, held at Hot Springs, Ark., Nov. 20–23, 1894.

(*Continued from page 872*).

FOURTH DAY—MORNING SESSION.

DR. ROBERT C. HEFLEBOWER, of Cincinnati, read a paper on

THE REMOVAL OF THE AUDITORY OSSICLES FOR THE RELIEF OF CHRONIC DEAFNESS AND OTHER ABNORMAL CONDITIONS.

After a thorough and exhaustive review of the history of operations to relieve chronic deafness, from the earliest date to the present time, the author passed to the indications for the operation. He believes that it is indicated in deafness caused by chronic catarrhal processes, as well as headache, vertigo, tinnitus, etc., accompanying this condition, adhesions and chronic suppuration from the middle ear, especially when the ossicles are necrotic. In seven cases reported, where the operation was made to relieve either deafness or tinnitus, or both, there were good results. In closing, the writer says: From my experience with this class of ear cases, I would draw the following conclusions:

1. No bad results attend the excision of the malleus and the incus, but the removal of the stapes is not without the most serious danger, both to life and hearing.

2. That the removal of the malleus and incus alone is far preferable to the removal of the stapes.

3. The operation is of extreme service in chronic suppuration in suitable cases, frequently avoiding mastoid and other serious disturbances of an equally serious nature.

4. It should be performed in cases where there is a high perforation, or where the membrana flaccida is perforated and where the ossicles are necrotic.

5. Tinnitus, headaches of ear origin and vertigo are relieved.

6. In suitable cases it is invaluable for relieving deafness, whether from chronic suppuration or from chronic catarrh and sclerosis.

DR. H. C. DALTON, formerly Superintendent of the St. Louis City Hospital, read a paper on

STAB WOUND OF PERICARDIUM.

In which he gave the history of a case upon which he operated for that injury. The patient, 22 years of age, entered the hospital Sept. 6, 1891, having been stabbed in the left breast an hour before admission. A wound half an inch in length was found, an inch and a half above the nipple. As there was no hemorrhage from the wound and the patient's general condition was good, an antiseptic dressing was applied and the patient put to bed. Percussion of heart and lung gave normal results. The temperature was 99.5 F., pulse 110; respiration 28. Ten hours after admission to the hospital, his temperature rose to 101, pulse 112, respiration 40, and superficial. Percussion then gave dullness over entire left side. The dressing was removed and blood and air gushed from the wound with each inspiration. The patient was chloroformed and six inches of the fourth rib removed. The bleeding intercostal artery was tied. The pleural cavity was full of clotted and fluid blood, which, together with air, gushed from the wound with alarming force with each inspiration. The patient was turned upon the side and the blood washed from the cavity. A transverse wound of the pericardium, two inches in length, was then seen. At the inner angle of the wound the pericardium was penetrated to the extent of half an inch. By the use of two pairs of long forceps, Dr. Dalton was able to grasp the pericardium a little beyond each angle of the wound and bring it well up to the surgical wound. With a long needle holder, armed with a sharply curved needle and catgut, he succeeded in closing the wound with continuous suture. Great difficulty was experienced in following the up and down movements of the pericardium caused by the heart pulsations. The pleural cavity was then thoroughly irrigated with hot sterilized water and the surgical wound closed without drainage. During the operation the pulse was 140, respiration 60. Several times during the operation the patient appeared to be dying but was revived by hypodermatic injections of whisky and strychnin. One hour after the operation the pulse was 100, temperature 99 and respiration 28. As there did not seem to be an unusual amount of fluid in the pericardium, the Doctor made no extended examination in this direction, the patient's condition being so grave as to necessitate the completion of the operation at the earliest possible moment. The heart itself was not penetrated to any appreciable extent. The patient made a rapid recovery.

The remainder of the Doctor's paper consisted of a discussion of stab wounds of the thorax in general. He insisted that in all penetrating stab wounds of the thorax, in which the wounds were low down anteriorly and laterally, a rib should be resected in order to see if the peritoneum had been penetrated through the diaphragm, in which case he strongly advised that a laparotomy be done. He stated, however, that in case the liver should prove to be cut, the better plan would be to resect a rib, split up the diaphragm and sew up the liver from above. He cited a case which he had reported in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Nov. 15, 1890, in which he had operated successfully in a case of this kind. The same patient also had a wound of the ileum. In order to reach this wound, he made a median incision. The patient recovered. He referred to a case reported in the *Medical Mirror*, in which he adopted this plan. In this case, the knife blade passed through the thorax and diaphragm, penetrating the spleen. He resected a rib and found omentum protruding through the diaphragm. The wound was then closed, and the abdomen opened by an incision four inches long, an inch below the costal border. This revealed a wound of the spleen which he closed by catgut suture. The patient recovered.

THE NEATEST CIRCUMCISION.

By DR. BRANSFORD LEWIS, of St. Louis. The author detailed a method of doing that operation for which he claimed many advantages in celerity, ease and exactitude of performance, and rapidity of healing. The operation was done with the assistance of two instruments presented by the author, a clamp and prepuce-tractor, which enabled the operator to carry out the following steps of procedure: 1, after cleansing the penis and encircling it with a small rubber band, the prepuce is drawn strongly forward, the traction being applied to its inner surface by means of the serrated tractor, mentioned; 2, the glans penis being repressed, the curved, fenestrated clamp is applied; 3, with these as a support and guide, 10 per cent. cocain solution is injected between the two layers of foreskin, anterior to the clamp—no danger of cocain poisoning occurring, since both clamp and rubber constrictor lie between it and the general circulation; 4, after effective anesthesia has been secured, six double length (ten inch) catgut sutures are run clear through the clamp-fenestra and the four layers of foreskin; 5, with strong scissors the latter is cut off at one sweep; 6, tractor and clamp being removed, the double length sutures being divided, and two additional sutures being placed at the dorsal and frenal sites, previously occupied by the tractor; 7, the vessels are secured and sutures tied all around, making a circumcision that is at once symmetrical, precise and admirable, leading to prompt union and a satisfactory result.

This operation does away with inaccuracy, appended cutting of the mucous layer, and slowness or replacing of suturing, etc. Patients read the newspaper while it is being done.

Drawings illustrating the steps of the procedure and of the instruments (made by the A. S. Aloe Co., of St. Louis,) were also presented by the author.

THE TREATMENT AND MANAGEMENT OF CORPOREAL ENDOMETRITIS AND A WORD AS TO PROPHYLAXIS IN TUBAL AND OVARIAN DISEASES

Was the title of a paper read by DR. WILLIAM H. HUMISTON, of Cleveland, Ohio, in which the author said that nine-tenths of all cases that he treats suffer from some form of endometritis, and its baleful influence on the sympathetic nervous system is marked and manifested by numerous and varied symptoms. Clinically the author recognizes three forms of endometritis—simple, septic and hemorrhagic. These forms were dwelt upon. The first and important principle in treatment is to relieve the passive congestion of the uterus, and this is accomplished by medicated tampons. The first tampon should be medicated with boro-glycerid, iodo-glycerin or ichthyol-glycerin and supported by sterilized, non-absorbent cotton tampons. The depleting effect of the medicated tampon is marked, and a notable relief is felt at once. The septic cases must be treated on modern surgical principles—rest, asepsis, drainage and curetting. When the cases are diagnosed early, and the proper treatment instituted, the author says the abdominal surgeon will not have his belt hanging full of suppurating tubes and ovaries.

DR. S. E. GANT, of Kansas City, followed with a paper entitled "A Few Remarks on the Early History of Rectal Diseases."

DR. FRANK WOODBURY, of Philadelphia, contributed a paper entitled

HEADACHES OF EXTRA-CRANIAL ORIGIN,

Which was read by Dr. I. N. Love in the absence of the author.

Dr. E. R. Haughton, of Midland, Texas, read a paper on "Surgical Treatment of Injuries of the Head, Trephining for Blood Clots and Pressure;" and Dr. E. H. McCullers, of St. Louis, followed with another paper entitled "Exercise Essential to the Proper Development and Maintenance of Function."

Dr. G. Frank Lydston, of Chicago, contributed a paper entitled

REMARKS ON THE RELATION OF RESIDUAL URINE TO VESICAL IRRITATION, ESPECIALLY IN PROSTATIQUES.

The author said it is generally accepted that most of the symptomatic disturbances incidental to certain chronic bladder diseases, especially in cases of prostatic enlargement, are dependent upon the accumulation of residual urine. The author has long been impressed with the idea that residual urine, *per se*, is not as important a factor in genito-urinary irritation as is ordinarily believed. He is satisfied that in a large proportion of adult males there is always a greater or less residuum of urine remaining in the bladder after micturition. If prostatic enlargement or other obstruction attacking the mouth of the bladder develop, we have the typical accumulation of residual urine characteristic of such cases. It will then be seen that there may be at varying periods of life extreme differences in the degree of accumulation of residual urine. The author believes that the residual urine is simply an incident upon which, if taken alone, the symptoms of vesical irritation in no wise depend. Ideally perfect drainage of the *bas fond* can only be accomplished by thorough drainage from above the tube through the trigone and out of the rectum. There were certain objections to this method which the author said it was not necessary to dilate upon. He simply stated as his opinion that only by some such procedure can the *bas fond* be thoroughly drained.

Dr. Hanau W. Loeb, of St. Louis, reported a very interesting case of

DOUBLE NASAL ATRESIA DUE TO SMALLPOX.

The author said we read with remarkable monotony, of failure after failure in the treatment of webbed fingers and conditions due to the deposit of scar tissue. We realize quite readily the almost futility of the treatment for the permanent relief of cicatricial contractions and adhesions resulting from syphilitic lesions of the pharynx, palate, and larynx, so that while no great skill was claimed in the management of the case reported in the paper, yet the patient's condition after a year and a half of observation merited attention.

LAPAROTOMY FOR PELVIC DISEASES NO LONGER A NECESSITY.

Was read by Dr. R. Stansbury Sutton, of Pittsburg. The assertion found in the text of this paper was founded upon the following argument: 1, we have a substitute for laparotomy in total extirpation of the uterus and appendages by the vagina, either with or without morcellement; 2, the operation has already been proven to be effectual and successful by Péan, Segond, Jacobs and others in Europe, and Henrotin, Engelmann, Sutton, Edebohls and others in the United States; 3, total extirpation of the uterus and appendages per vaginam gives a lower mortality than laparotomy for the removal of the appendages alone. Morcellement of small fibroid tumors gives a lower mortality than laparotomy for the removal of similar tumors; 4, these operations by the vagina shorten the convalescence of patients, who are out of bed on the seventh day; 5, in all cases of gonorrheal, tubercular or other infectious type of endometritis with chronic salpingitis and chronic ovaritis, a cure is not effected save by total extirpation of the uterus and appendages. The vaginal route is the best; 6, in all cases of fibroid tumors of the uterus, not reaching above or quite to the umbilicus, when the uterus must be sacrificed, total extirpation of the organ, tumor and appendages by morcellement can be best effected per vaginam; 7, small cysts of the ovary or broad ligament, or solid tumors of the ovary can be reached and by morcellement and puncture removed through the vault of the vagina, leaving the uterus and opposite ovary intact; 8, in all cases of pyosalpinx or of multiple pus centers with coexisting solidification of the pelvic roof, total extirpation by morcellement per vaginam is the only feasible operation, and it cures the patient; 9, total extirpation per vaginam is followed by a cure in the greatest majority of cases as compared with laparotomy; 10, the following sequelæ after laparotomy do not occur after total extirpation per vaginam: Cancer of the uterus, adenoma of the uterus, tuberculosis of the uterus, gonorrheal affection, hemorrhages of the uterus, filthy catarrhal discharges from the uterus, ventral hernia, fecal and other fistulas, the mark of a wound on the abdomen. The nerve storms subsequent to total extirpation are not as great as after laparotomy. The patient is restored to perfect health; this is not the case in more than 50 per cent. of laparotomies for pelvic diseases; 11, the bacteriology of infectious diseases demands removal of the uterus with the appendages; 12, total extirpation per vaginam is in strict conformity to anatomic relations; 13, the physiologic results following total extirpation are free from jarrings, and the patient is functionally a smoothly running mechanism; 14, laparotomy for these diseases is followed by all manner of physiologic disturbances which affect the vascular, muscular, nervous and digestive systems; 15, in the face of this argument, laparotomy for pelvic disease is no longer a necessity, but in the author's opinion should be abandoned except in very rare instances indeed.

MODERN SURGICAL TECHNIQUE.

By Dr. Henry O. Marcy, of Boston. The essayist in his paper first emphasizes the importance of a most careful bacteriologic training on the part of him who would become proficient in surgical practice. In the preparation of the operating room, Dr. Marcy points out the ease and safety with which an ordinary living room, by preference the kitchen, is made comparatively sterile, when from necessity the surgeon is called upon to act promptly and suddenly. In abdominal wounds, where irrigation is not advised, he substitutes for it a slowly flowing stream of oxygen gas from a compressed cylinder. This sterile gas is heavier than atmospheric air which it displaces, and as a consequence renders the wound less likely to infection from the products of respiration and atmospheric contamination. Dr. Marcy reiterates his well-known views upon the value of tendon sutures, buried in all aseptic wounds for the approximation and reinforcement of the structures, emphasizing the importance of abandoning the drainage tube in all aseptic wounds and hermetically sealing the same with iodoform collodion. Aseptic wounds made in aseptic structures, aseptically closed and sealed are always followed by primary union.

The Committee appointed to consider the recommendations contained in the President's Annual Address submitted the following report:

1. While this Association is loyal to the last degree in its affiliations and associations with the members of the regular profession, it still believes that it is not derogatory for a scientific physician to hold a patent on a mechanical or surgical device that proves of benefit to suffering mankind. It sees no reason why the genius and talent of an inventive physician should not be protected by law as well as that of any other man.

2. This Association, if it would demonstrate its usefulness and perpetuity must insist upon the application of business principles in the management of its business department. It therefore insists that every member shall pay his dues annually and with promptitude or else he must be suspended from the exercise of further privileges. To this end the Secretary is directed to drop all names from the roll who decline to pay their dues after two years.

3. The Association for the present will adhere to the plan of general sessions, reserving the right to divide into sections in the future whenever a necessity therefor shall arise.

4. This Association does not believe that the genius of its organization would be attained by reference to a committee, of the papers offered at its annual meetings, with a view to determine which shall be read; but it recommends that authors of papers furnish the Secretary with abstracts of the same, not to contain more than eight hundred words, at least ten days before each meeting.

5. The Association does not feel that a change in the date of its annual meetings is advisable.

6. This Association unites in urging upon the Congress of the United States the propriety of appropriating sufficient funds for the proper maintenance and support of a medical school at Washington, whose purpose shall be the instruction and training of physicians entering the army in regard to requirements of the practice of medicine and surgery in the military service of the United States.

7. This Association believes that in the proper education of physicians by adequate preliminary training and a college curriculum of four years and a final examination for license by the State, lies a true solution of many, if not all, the much controverted questions of ethics; and that in the present day a further agitation of these questions by debate

on the floor of societies met together for scientific advancement is unwise and injudicious.

8. This Association recognizes the fact that it owes to Col. H. C. Townsend and Chas. E. Ware, of the Missouri Pacific Railway, a debt of gratitude for courtesies extended in the preparation for and conduct of this meeting, and as a slight recognition thereof it hereby elects them to honorary membership.

(Signed.) WILLIAM WARREN POTTER, M.D., Chairman,
I. N. LOVE, M.D.,
T. H. STUCKY, M.D.,
A. S. GARNETT, M.D.,
CHAS. B. PARKER.

The Committee on Nominations made the following report:

President, Dr. W. N. Wishard, of Indianapolis.

First Vice-President, Dr. Thomas E. Holland, of Hot Springs.

Second Vice-President, Dr. Chas. B. Parker, of Cleveland.

Secretary, Dr. Frederick C. Woodburn, of Indianapolis.

Treasurer, Dr. Harold N. Moyer, of Chicago.

Judicial Council, Drs. W. F. Barclay, of Pittsburg, and A. H. Meisenbach, of St. Louis.

Place of meeting, Detroit. Time, September, 1895. Chairman of Committee of Arrangements, Dr. H. O. Walker, of Detroit.

DR. WALKER then offered the following resolutions which were unanimously adopted:

Mr. President:—I take the liberty to assume a pleasant duty. Words can not but fail to express what is now in the minds of all of us, that we have had a glorious time in Hot Springs. The twentieth annual meeting of this Association will ever be remembered as the best in its history, replete with scientific profit, mingled with unstinted hospitality.

I, therefore, move that the thanks and appreciation of this Association be tendered to the profession and citizens of Hot Springs, especially to Dr. Thomas E. Holland, the Chairman of the Committee of Arrangements, for his untiring labors in our behalf. To Col. H. C. Townsend and Mr. Chas. E. Ware, of the Missouri Pacific Railway; Col. and Mrs. Woodhull of the Army and Navy Hospital; Dr. and Mrs. A. H. Garnett, Maj. and Mrs. Alfred Whittington; Mr. and Mrs. S. A. Douglass; Mesdames S. H. Stitt and Bancroft; Mr. and Mrs. I. T. Hay, of the Arlington Hotel, and Mr. R. E. Jackson, of the Park Hotel.

Resolved, That it is the sense of this Committee, that in the future the Chairman of the Committee of Arrangements select a committee of three as censors of program to act as a committee on revision, and that every paper or its abstract to be read before this Association in the future, must be in the hands of said committee twenty days before the time of meeting, and must be approved by said committee before being put on the program.

(Signed.) I. N. LOVE, M.D., Chairman.
H. O. WALKER, M.D., Secretary.

On the adoption of the above resolution of thanks, very timely and appropriate speeches were made by Drs. J. C. Culbertson, of Cincinnati, and Chas. H. Hughes, of St. Louis, in which they referred to the hospitality of the citizens of Hot Springs in beautiful language.

On motion, the Association then adjourned to meet in Detroit in 1895.

NECROLOGY.

JOHN MILLS BROWNE, M.D., ex-Surgeon-General U. S. Navy, Dec. 7, 1894. He was born in Hinsdale, N. H., May 10, 1831, and was graduated from the Medical Department of Harvard University in 1852. In the following year he entered the Navy as an Assistant Surgeon and performed his first duty on board the steamship *Warren*. He was promoted to the rank of Passed Assistant Surgeon in 1858, and was made Surgeon in 1861. While serving as Surgeon of the *Kearsarge*, the famous engagement occurred off the coast of France, which resulted in the sinking of the *Alabama*. Ten years later he advanced to the rank of Medical Inspector, and in October, 1878, was promoted to the rank of Medical Director. He was appointed by President Harrison Surgeon-General of the United States Navy, and on the expiration of his term was reappointed and served until his retirement, one year and a half ago. He took high rank in Masonic circles, was a thirty-third degree Mason, and succeeded the late Albert Pike as Chief of the Scottish Rite for the Southern jurisdiction of the United States.

He was a genial and companionable man who lived without reproach and died without fear. He was not only one of the ablest of his corps, but one known to be absolutely just in all his dealings with his brother officers and mankind in general.

CHAS. PINCKNEY GAGE, M.D., Concord, N. H. He was born in Hopkinton in 1811 and was graduated at the Cincinnati Medical College in 1837. After graduation he spent considerable time in the hospitals and in clinical study in Cincinnati, remaining until 1838, when he removed to Concord, where he has since resided. He was a delegate to the convention for the formation of the AMERICAN MEDICAL ASSOCIATION in 1846, and attended the Baltimore meeting in 1848.

EZRA SLOCUM CARR, M.D., of Pasadena, Cal.——A. W. Lapham, M.D., of Victoria, Ill., November 29.——John Evans, M.D., of Richmond, Ind., aged 84.——W. H. Hart, M.D., of Pittsburg, Pa.——Wm. J. Hunicke, M.D., of St. Louis, November 30.

SOCIETY NEWS.

Northumberland County (Pa.) **Medical Society.**—The annual meeting of the Northumberland County Medical Society was held at Sunbury, Pa. The following officers were elected for the ensuing year: President, G. W. Furey, East Sunbury; Vice-President, T. F. Gilbert, Elysburg; Secretary, Wm. B. Stoner, Sunbury.

The Wayne County (Mich.) **Medical Society** will hold a special meeting in Detroit December 17.

A Dinner to President Maclean.—A dinner was tendered to Dr. Donald Maclean, of Detroit, at the Russell House in that city, December 4. The toasts and those who responded follow: "The Welcome Guest," Dr. Maclean. Dr. T. A. McGraw, who was scheduled for the subject "Fraternity," was unable to be present and Acting Health Officer Webber was appointed as his substitute, who responded in a fitting manner. Dr. C. T. Newkirk, of Bay City, told all about the friendship that exists in the medical profession, and Dr. C. B. Nancrede responded to the toast, "Fellowcraft." Dr. Cogshall, of Flint, appeared as a substitute for Dr. O. P. Barber, and spoke about "Fellowship," while G. E. Frothingham, Sr., told about the "Fidelity" that exists in the medical profession, and Dr. C. G. Jennings about the "Felicity" of being doctors. The speeches were above the average and the themes apparently to the liking of the doctors. Frederick Mills played several violin solos and other artists furnished excellent music. All in all, it was an occasion that will long be remembered by those who attended. A number of ladies occupied seats near the doors and listened to the responses to the toasts and the musical selections.

Financial Loss from Tuberculosis.—It has been computed—on somewhat the same principle that was applied by Dr. Benjamin Lee to the smallpox epidemic in Philadelphia—that there is a money loss, from consumption alone, in England amounting to $72,000 for every 1,000,000 children born.

Medical Courage Honored.—Dr. Mary Bradford, an American missionary to Persia, is about to receive the highly complimentary present of a hospital, to be conducted by herself. It is the outcome of her very courageous course during the cholera epidemic of 1892. She remained at her post through the entire epidemic. Some wealthy merchants, who recognize the heroic qualities of the lady's conduct, have undertaken to build and equip this hospital as a kind of reward of merit.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:
PER ANNUM, IN ADVANCE $5.00
SINGLE COPIES. . . . . 10 CENTS.
Subscriptions may begin at any time and be sent to
THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 86 FIFTH AVENUE, CHICAGO, ILLINOIS.
W. H. LOWDERMILK & CO., WASHINGTON AGENT.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, Venetian Building, Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

Gentlemen already members of the Association should send their annual subscription to the Treasurer, or direct to the JOURNAL office.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the *Editor*, and all communications relative to the business of the JOURNAL, proof sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 86 Fifth Avenue, Chicago.

SATURDAY, DECEMBER 15, 1894.

THE FAILURE OF THE ERYSIPELAS TOXINS.

"Every delay is hateful, but it gives wisdom."—PUBLIUS SYRUS.

There is no longer much question of the entire failure of the toxin injections, as a cure for sarcomata and malignant growths. During the last six months the alleged remedy has been faithfully tried by many surgeons, but so far not a single well authenticated case of recovery has been reported, so far as our reading has extended, and the personal experience of surgeons of our acquaintance with whom we have conversed, demonstrates that in all cases in which they tried the erysipelas toxin the result was no improvement.

We can readily understand and sympathize with the great desire to rescue from impending death, sufferers from an incurable disease, but science demands that its truths shall be positively demonstrated before being accepted. The medical profession, for centuries conservative in acceptance of new doctrines, has been startled out of its usual practice by the brilliant discoveries of bacteriology, and it now seems as if any assertion, no matter how absurd, needs only some strong voice or lucid pen, to make the profession swallow it greedily. It is the age of the sensation monger, and the seeker after notoriety may enjoy a temporary celebrity by a very easy process. He has only to announce the sure cure of some hitherto incurable disease by some foreign chemic product, or microbic mystery and the thing is done. The celebrity may be short-lived and suffering humanity deluded by false hopes, but the story was a pleasant one while it lasted.

The plain duty of the profession is clear. We should patiently wait until those having the facilities for investigation complete their work, and bearing in mind the infirmities of poor, weak, human nature, we should not accept as conclusive, reported cures by any single investigator no matter how prominent. We should demand that these cures be corroborated by other observers, making investigations independently.

In the matter of the diphtheria cures, we must remember that while statistics show a relatively large proportion of alleged cases prove to be diphtheria by bacteriologic examination, still of this number many recover by natural processes under ordinary therapeutic measures. It will take much time before the commercial supply of antitoxin is at all adequate to the demand, and before it can be produced in this country. Let us, therefore, wait patiently, as long before our horses are properly immunized, our foreign leaders may have prepared even a greater bolus for us to swallow.

A TIMELY TOPIC.

"Shall the State maintain supervision of the propagation of vaccine virus?" is one of the subjects discussed at the National Conference of State Boards of Health, held in Washington during the current week. At this writing the JOURNAL is not advised of the result of the discussion; but it is safe to assume—the members of the Conference being practical sanitarians and men of at least average intelligence—that the answer has been an emphatic affirmative.

The topic is a timely one. Whatever of doubt exists at the close of the Jennerian century as to the value of vaccination is largely, if not solely, due—first, to the use of inert or impure virus; and, second, to want of care in the performance of the operation. Both these causes have been dwelt upon by every writer on vaccination from the time of JENNER himself. The late DR. RAUCH, especially, attributed to these causes the growing neglect of the practice and the opposition to its compulsory enforcement, and boldly asserted that it was not justifiable to compel vaccination when the supply and quality of vaccine material could not be controlled and guaranteed by competent authority; when many physicians, to say nothing of the laity, treated the operation as a mere scratching of the skin; and when the majority of medical colleges regarded it as too insignificant to require a single lecture, and graduated as physicians men who had never seen a vaccine vesicle.

Leaving the anti-vaccinationists out of the question—as belonging to that category of people who require no cause or reason to be "ag'in the government" except that there is a government—it remains that there is still a doubt of the exact value of vaccination after nearly a hundred years' experience. Within the past few months the Royal Commission on Vaccination has made another report of its labors,

but still without expressing any opinion on the evidence it has accumulated. This Commission, presided over by LORD HERSCHEL and SIR JAMES PAGET, has been holding weekly sessions since 1887, and the perplexing nature of its labors, owing to the conflicting testimony presented, still delays a verdict, notwithstanding the vaccination laws are suspended awaiting it. And within the past few weeks DR. CROOKSHANK, Professor of Comparative Pathology and Bacteriology in King's College, has delivered an address before the Medical Society of his College, in which he denies that vaccination has any value at all to protect against smallpox, or at most that "of 'issues' against the plague."

PROFESSOR CROOKSHANK'S disbelief, as well as the deferred verdict of the Royal Commission, is due to failure to define "vaccination." Not everything that is so called is really vaccination, and when CROOKSHANK claims to have found seventy different varieties of cicatrices or "marks," produced by different kinds of virus on different individuals, of different constitutions, ages and nationalities, he reveals the *crux* of the situation. These different "marks" are the sufficient proof that CROOKSHANK was not dealing with properly vaccinated individuals. A perfect vaccination—and nothing short of perfection should be considered—with perfect virus, either humanized or bovine, results, to quote DR. MARTIN, "in the production of a scar as distinct and defined as if stamped by a sharply-cut die, and the scars of a hundred such vaccinations are almost as like each other as the impressions on a hundred coins fresh from the mint." To secure such a scar, which only is evidence of a protective vaccination—the first essential is a perfect vaccine, and experience proves that the unregulated propagation of vaccine virus does not furnish this *sine qua non*.

This Conference of State Boards of Health will not have been held in vain if it shall have devised some method by which the first essential condition of compulsory vaccination, as laid down by DR. ELISHA HARRIS, may be complied with, to-wit: "That the quality of the vaccine lymph shall be absolutely perfect, and that the insuring of this uniform excellence shall not be permitted to be subject to uncertainty or to any kind of capricious judgment."

THE IMMIGRATION SERVICE.

The Superintendent of Immigration HON. HERMAN STUMP, has issued his annual report from which it appears that in the year ended June 30, 1894, 288,020 immigrants arrived in this country, a decrease of 152,173 as compared with the year 1893, and the decrease for the preceding year was 141,044. The total decrease for the two years is 293,807. SUPERINTENDENT STUMP thus accounts for the decrease:

"The decrease in 1893 was caused by the suspension of immigration on account of cholera, and the decrease in 1894 is largely to be attributed to the stagnant condition of our business enterprises, owing to financial causes and the consequent absence of demand for both skilled and unskilled labor; but at the same time it must be borne in mind that much of this decrease is to be attributed to the efficient execution of the immigration laws, by the strict inspection and prompt deportation of the prohibited classes, as each person deported to the country whence he came deters many from making the attempt to land here, and also the refusal of steamship transportation lines to sell tickets or embark undesirable persons in foreign countries.

"The inability to procure transportation prevents hundreds from reaching our shores who now apply for tickets and are refused passage by the steamship agents at the homes of those contemplating immigration; thus demonstrating that the act of March 3, 1893, is both wise and humane, and secures to our country a greatly restricted immigration, and those who succeed in coming are of the better class of European peasantry. There seems to be no doubt that as the present system of inspection (viz: First, at the home of the emigrant; second, at the port of embarkation, and third, upon his arrival in this country) becomes better understood and is more vigilantly executed it will be more remedial and far-reaching in its effects and can from time to time be improved by such regulations and Congressional amendments as practical experience demonstrates; consequently the volume of immigration will be restricted upon a wholesome basis and the condition of those arriving will continue to improve.

"To show how the inspection of intended immigrants at their homes is enforced, it is only necessary to recollect that by law the steamship companies are required to transport to the country whence they come all immigrants who on inspection are refused a landing in the United States. So many of late years have been returned, that it has proved a considerable expense to them, and in order to avoid this they have made certain regulations defining the classes who should be refused transportation by their agents, and prescribing penalties for booking immigrants prohibited landing in the United States, of which the following is an extract:

'*Extract from instructions of the North German Lloyd, White Star Line, Hamburg-American Packet Company, Cunard Line, Netherlands, American, Red Star Line, French Line, and Anchor Line and other steamship companies to their agents.*

'Such emigrants as are liable to become a burden to the State, paupers, criminals, consumptives, and those suffering with loathsome and contagious diseases; the blind, lame, deaf and dumb, and crippled persons, women with children without any relatives in this country, single females in pregnant condition, single females with children.

'We beg to advise you that the law will be enforced strictly. In view of this, we request you to use the utmost care in accepting emigrants for transportation, and in doubtful cases to consult us, giving all the details and conditions before you enter into a contract. If we approve the acceptance of a passenger or passengers you will be in no way held responsible, but if you enter into a contract for transportation of emigrants, of whom with a certain degree of attention you could have known beforehand that they would come under that class of emigrants which are refused admittance to America, we will be compelled to charge you 80 marks for every adult for return transportation, and also the transportation costs from the port to the home of the passenger.'

"For your further information I append to this report a full circular of one of the above-named companies to its agents in foreign countries.

"The principal steamship lines have endeavored to book only such steerage passengers as should be admitted, and have shown a desire to observe the law in every respect; the results of which are plainly evident in the class of immigrants now arriving. At the same time it is to be expected that they will continue to secure as many passengers as possible. Their steerage business to this country this year was very light, and had it not been for the unusual number returning to their foreign homes it would have proved to them a financial loss.

"When it is considered that each of the above lines has several thousand agents located in every section of Europe from which emigration flows, whose duty it is to inspect each and every one contemplating emigration before selling a passage ticket to the United States under the penalties prescribed in the above regulations, it is evident they will exercise the utmost caution. And this inspection is most valuable, being based upon self-interest and the agent's desire to shield his company from the responsibility imposed upon it

by our laws in embarking persons belonging to the prohibited classes, and is more valuable because he may be, and generally is, personally acquainted with the immigrant and his surroundings."

It is certainly gratifying to see that not only is there a diminution in the number of immigrants, but that there is an actual exportation of this class. The United States has been overburdened for many years past, and this will be a much needed relief. The Commissioner, while not furnishing the statistics, is of opinion that for the past year, more steerage passengers have left our shores than have come in, through our seaports.

The medical inspection at Ellis Island, under the direction of SURGEON WM. A. WHEELER, of the Marine-Hospital Service shows the work of the Medical Examiners as follows:

Steerage passengers inspected upon arrival	231,662
Physically examined, certified, and sent to hospital	1,081
Physically examined, certified, and sent before the board of special inquiry for action	527
Physically examined and recorded (for minor defects)	1,630
Landed cases applying for relief which were certified and sent to hospital for treatment	471
Landed cases applying for relief which were physically examined and certified for deportation	215
Landed cases applying for hospital relief, examined and rejected.	151

That officer's report to the New York Commissioner is published and we here reproduce it:

ELLIS ISLAND, N. Y., July 12, 1894.

SIR:—The following is a report of the work done by the medical department of the immigration service at Ellis Island during the year ending June 30, 1894:

Since our last report there have been no changes in the medical staff either connected with the office or the hospital. Some important and greatly needed changes, however, have been made in the hospital buildings which were recommended last year, in addition to which the hospital has been provided with a complete steam disinfector, fully capable of meeting all requirements. It will be noticed that we have this year treated all of our insane cases at Ellis Island. This we have found to be practicable since they are few in number, and it is very much in the interests of economy. The only cases not treated on the island are those of smallpox, diphtheria, and scarlet fever, and unless a suitable building were provided, well isolated, it would not be possible to properly care for them. During the past year there have been but fifteen of these cases, and, should that number be not increased, it is doubtful if any better arrangement could be made than the one we now have with the Health Department of the city of New York.

My recommendation of last year that a contagious hospital be built at Ellis Island for these very cases was based upon the larger number occurring during the previous years. It is very gratifying to find that for various reasons the number of such cases is annually diminishing and with it the need of a separate contagious hospital on Ellis Island.

Our buildings have been painted and are to-day in a good state of preservation. The roofs of the kitchen, dining rooms, and hospital C have been painted by our attendants, also the inside of the male and female wards. The roof of the executive building needs painting, which our attendants can not do, owing to its high pitch and their lack of experience.

The walls of hospital C will soon need to be sealed with rock plaster, as they are becoming infested with vermin which it is impossible to dislodge. In that respect the plastering of the partitions of the male and female wards has been an unqualified success.

THE COMMISSIONER OF IMMIGRATION,
Port of New York, N. Y.

TO WHOM THANKS ARE DUE.—The HON. SHELBY M. CULLOM, U. S. Senator from Illinois, has kindly sent the JOURNAL a copy of the *Congressional Record* for the last two years, and we are also under obligations to that Senator for various public documents. This Senator has always been keenly alive to the wants and wishes of the medical profession.

CORRESPONDENCE.

Modern Insanity.

ORAN, MO., Dec. 4, 1894.

To the Editor:—If an individual shows marked superiority in any line of thought he is pronounced *insane*. The doctor, lawyer, preacher or tradesman who excels all others in his special line is said to be "cranky." The teacher who excels all other teachers is said to be "eccentric." The modern aggressive evangelist is also "insane." The inventor like unto Edison, he too, is "insane." Anything outside of the ordinary is pronounced insanity. The excessive user of narcotics is called a "narcomaniac." The individual who drinks excessive quantities of alcohol is said to be "insane." The individual who appropriates goods which do not belong to him is said to be a "kleptomaniac." In fact, any excess in any line of conduct, whether good or bad, is pronounced insanity.

In olden times, if a man showed any superiority over his fellow-men he was given credit for it. If he was a great scholar he was thought to be more intelligent than others with less knowledge. Men in different callings who showed marked superiority were called great men; some, like Solomon, were called wise men; others, like Christ, were called good men. Men who committed great crimes were called criminals. Men who drank excessive quantities of liquor were called drunkards. Young people were taught to imitate the good and great men and to abhor the criminal and drunkard. These notions are all changed now. We no longer have good or great men. A genius is now defined as a man who has one or more talents highly developed, while his other talents have been neglected. A genius and an insane man now mean one and the same thing. In olden times an insane man was thought to have lost some mental quality once possessed, but this notion seems to have been erroneous. Men do not lose mental power any more; they only allow some sense or talent to be too much developed. This unbalances the fellow and he becomes insane.

Modern insanity is easily diagnosed and is said to be very curable, especially under hospital treatment. A few doses of animal extracts and antitoxins do the work. The antitoxins stop excessive action of all kinds. The animal extracts develop the undeveloped talents or senses, thus producing the ordinary. This modern insanity works a revolution in science, the arts and education. The rising generation will be taught that being wise, good or bad is symptomatic of insanity and a dangerous thing to do. The main thing is to be ordinary. Reading the Bible or hard study of any kind is dangerous. Going to school more than one day in a week would have a tendency to produce literary insanity. Preaching more than one discourse a month would produce Jonesism. Listening to a brass band more than a few moments at a time is extremely dangerous. Do not go to church at all. Religious insanity is the worst form. Attend baseball and football games often; this exercises all the senses equally. Prize fighting never produces insanity. No prize fighter ever went crazy. See to it that you do not go into excess in any line; just continue to be ordinary. Education is a great factor in producing insanity. Curious! What old-time people thought was intelligence turns out to be only modern insanity. Idleness is the thing to look after; especially to keep the mind idle. Do not think. Thinking has caused more insanity than all other things combined. Industry also has a baneful effect. Whatever you do, don't work.

W. P. HOWLE, M.D.

Teaching in Medical Colleges.

WAUKEGAN, ILL., Dec. 9, 1894.

To the Editor:—Allow me to make some suggestions relative to systematic instruction in medical colleges. This matter is forced upon our attention by the criticisms of medical teaching by students from other schools. The time has come when a systematic grouping of subjects to be taught should be adopted by all schools that desire to be known as eminent centers of learning. This system has been adopted by some of the literary and scientific institutions of our country; but it is far from being universal. In medical colleges the plan has scarcely received a serious thought. Only a few schools where medical men are trained have arranged for such united, such systematic work.

The president or dean of a college of medicine should know what is taught in every department, in every chair. This would entail a vast amount of work upon one man, and to aid him in his task the appointment of head professors in the different departments may be made, as is done in some of the universities. The work then can be so systematized that unwarranted repetitions will not occur. Not long ago a gentleman told me that within a short time he had listened to four different teachers in the same institution and each succeeding one was lecturing upon the same subject that he had heard at the first lecture. It has been said by those who do not favor such classified division of work that there is no danger of giving medical students too much of any one subject. That may be true, but there is danger that some important subjects will be omitted; and to avoid these omissions a closer classification and supervision of work is necessary.

The sub-dean or head professor of the department of materia medica and therapeutics should assign the work to be done by the professors of medical botany, materia medica, general therapeutics, electro-therapeutics, pharmacology, et cetera.

The Department of Public Health or Preventive Medicine should be divided into general pathology, general etiology, bacteriology, special animal pathology, practical hygiene, and state medicine, at least. Anatomy, medicine, surgery and other departments should be likewise subdivided and the work so assigned that each subject will be exhaustively presented and needless repetitions prevented.

When such a plan as this is adopted in our medical colleges, we may hope to send out men more competent to deal with the practical work of the physician. The suggestions that have been lately made in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION relative to advanced standing and higher work in the Department of Public Health could then be practically carried out, and the medical profession would take a long stride forward.

J. M. G. CARTER, M.D.

The Antiseptic Treatment of Typhoid.

FREEPORT, ILL., Dec. 4, 1894.

To the Editor:—Dr. John Eliot Woodbridge, of Youngstown, Ohio, has published during the last year, in several medical journals, among them the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, such a glowing and enthusiastic paper on the treatment of typhoid fever, that, contrary to my conservative habits, I have been lately giving it a trial. The treatment, it seems to me, if not beneficial is absolutely harmful. The first part of his prescription containing podophyllin, calomel, guaiacol, thymol, menthol, eucalyptol, if given to the extent that the author recommends, will certainly have a tendency to weaken the patient and lessen his chances of recovery, unless it acts at the same time as a germ killer and thus lessens the virulence of the disease. In my hands, so far, the remedy has failed to produce that marked change in the temperature curve, that Dr. Woodbridge's charts show in his own practice. In fact, in a vigorous young woman, after two weeks' trial of the treatment, I have still a temperature of 105 F. under the tongue every afternoon, unless I combat the excessive heat of body with frequent spongings and bathings, which I have done from the outset.

My motive in writing these brief lines, is to solicit a correspondence, from the profession as to their experience with this new treatment of this terrible disease.

I hope, Mr. Editor, you will see the importance of getting the experience of others in this matter, and allow me the space in your JOURNAL for this end.

Hoping I may hear from others of the profession, who have undoubtedly like myself been trying Dr. Woodbridge's treatment, I am yours very truly,

W. S. CALDWELL, M.D.

The Index Medicus.

PHILADELPHIA, PA., Dec. 3, 1894.

To the Editor:—I have learned that the Index Medicus will cease to be published with the February number, owing to lack of support and the fact that a large number of its subscribers are delinquent, unless an effort is made to continue it.

The value of this publication to those who do any work at all in connection with medical literature is so great that I take the liberty of writing to you to express the hope that you will not only become a subscriber, but will urge other of your professional friends to do so. It is particularly necessary that the Index Medicus should be continued owing to the fact that after the completion of the supplementary volume of the Index Catalogue of the Surgeon-General's Library, there will be no record of contemporary medical literature and he who desires to keep pace with it, or who wishes to study a particular subject will have to resort to the laborious task of seeking in various journals that which he desires if the publication of the Index Medicus ceases.

It will be possible to continue the Index Medicus if 500 new subscribers are obtained. The subscription price is $10 per annum which should be sent to Mr. George S. Davis, publisher of the Index Medicus, Box 470, Detroit, Mich.

As the Index Medicus can never be made a success from a commercial point of view because of the peculiar scope of its work, I have no hesitancy in making you acquainted with these facts, and I earnestly hope that you will insert a notice emphasizing the importance of this matter in the columns of our journal.

Yours truly, H. A. HARE, M.D.

Photographs of Members.

DUNKIRK, IND., Dec. 3, 1894.

To the Editor:—Please explain the use of the photographs of members of the ASSOCIATION as requested in the JOURNAL of last week. Respectfully,

J. B. GARBER, M.D.

ANSWER.—It is proposed to keep them on file in the JOURNAL office, for reproduction in the columns of the JOURNAL from time to time as occasion may require.

No Diphtheria at Brocton.

BROCTON, ILL., Dec. 11, 1894.

To the Editor:—As to the prevalence of diphtheria at Brocton and Five Points, Ill., will say there is not a case at this time that I know of at either place, and I have had charge of most of the cases. Our school at Brocton was closed for three weeks, but has been opened for two weeks since. There were two deaths from diphtheria here, or one physician called it such and the other asserted it was not. I I never saw either of these cases. General health good in this location. Respectfully yours,

H. C. KERRICK, M.D.

PUBLIC HEALTH.

Purity of Antitoxins.—The New York City Board of Health has issued the following circular:

HEALTH DEPARTMENT.

Center, Elm, White and Franklin Streets, (Criminal Court Building.)

NEW YORK, Dec. 7, 1894.

HON. CHARLES G. WILSON, (President).

SIR:—The accompanying report is hereby approved. The grave consequences following fraud in the preparation of this valuable remedial agent necessitate prompt and vigorous action on the part of the Board of Health. Steps should be taken at once to supervise in the most careful manner the sale of diphtheria antitoxin in the city of New York. This can only be accomplished by a systematic inspection and scientific examination of the various preparations of antitoxin offered for sale in this city. In event of fraud in the offering of spurious preparations or preparations of doubtful strength, the Board should institute criminal proceedings against offenders. In order to regulate the sale of diphtheria antitoxin in the city of New York, the following resolution is hereby submitted:

"*Resolved*, That Dr. T. Mitchell Prudden, Consulting Physician to the Health Department in the Division of Pathology, Bacteriology and Disinfection, and Dr. Hermann M. Biggs, Pathologist and Director of the Bacteriological Laboratory of this Department, be requested to prepare and submit some plan for the determination of the strength and purity of the various preparations of antitoxin which are now or may be hereafter offered for sale in the city of New York, so that the public may have some guarantee that only genuine preparations of antitoxin of proper strength are furnished for sale.

Respectfully submitted,

(Signed) "CYRUS EDSON,
Chairman Sanitary Committee."

The above report and resolution were adopted at a meeting held on Wednesday, Dec. 5, 1894.

HEALTH DEPARTMENT.

Center, Elm, White and Franklin Streets, (Criminal Court Building.)

HON. CHARLES G. WILSON, (President.)

SIR:—The great practical importance of the new antitoxin treatment for diphtheria, not only in controlling but in curing the disease, has created a demand for the new remedy so universal and urgent, that the occasional small supplies which can obtained from the European laboratories are wholly inadequate. It is therefore imperative that without unnecessary delay the preparation of the new remedy should be generally undertaken in this country. It has been already begun by the New York City Health Department in a limited way, and we trust that the requisite means and equipment may soon be furnished to the Department for making the antitoxin in sufficient amount at least for local use.

The preparation of this remedy requires considerable outlay for laboratories, for the necessary animals and their safe housing and scrupulous care; and above all for the services of competent and experienced bacteriologists or specially trained experts. The efficiency of the remedy and the security of those to whom it is administered from any possible danger in its use, depends in the most intimate way upon the skill and reliability of those engaged in its manufacture. Careful and delicate tests are required at every stage of its preparation. The strength of each lot of the remedy must, when it is finished, be determined in the most exact way by those in command of the necessary special skill and experience. It is one of the distinguishing characters of this remedial agent, that its greatest efficiency is obtained only when it is administered in the earlier stages of the disease and then in doses possessing a strength absolutely to be relied upon. Should the material used be for any reason deficient in healing power through error, carelessness or fraud in its preparation, time may be lost, so precious to the patient, that it may involve his life.

The antitoxin serum when ready for use is a yellowish fluid without any especially distinguishing or characterizing appearance; to the eye resembling the clear, yellowish fluid which separates from blood when it clots, from which it can be distinguished only by exact tests of its curative and protective value on animals.

The new remedy will be at the best rather costly, on account of the time required for its preparation—always many weeks at least—the cost of material and animals and of expert services. At present the market price of the antitoxin is unduly great, and probably will be so for some time to come on account of its scarcity and the great demand for it. It follows from what has been said that it is of the utmost importance to those who use this remedy that there should be some reliable guarantee for every preparation placed upon the market that it has been prepared by competent persons, and that in every case it possesses the requisite purity and power. The preparations now occasionally furnished in this country in small quantity by the German pharmaceutical houses, Schering and the Farbwerke (Hochst-am-Main), have specific guarantees as to strength and purity by bacteriologists of universally recognized skill and experience. Unless some such security is afforded, it would be qnite easy for unscrupulous persons willing to commit such a crime to place on the market small bottles of yellowish fluid labelled "antitoxin," containing an inefficient amount of the healing agent, or even none at all, and for a time at least profit by the extraordinary demand for it, perhaps at the cost of life and at the risk of discrediting a most potent and beneficent remedy.

That this is not a merely fancied and only possible menace to the welfare of those stricken with this dreaded disease, and so often the wards of the Department of Health, is shown by the fact that already in the city of New York several different preparations of alleged diphtheria antitoxin, said to have been prepared in this country, and wholly, so far as we can learn, without proper guarantee of efficiency, have been furnished and used for the treatment of diphtheria. One of these preparations has been already subjected to the necessary crucial tests by the Department and found wholly inefficient and inert.

While we suggest its importance, we are not prepared at the moment to recommend in detail a definite form of guarantee of purity and adequate strength in this remedy, such as would be practicable and desirable for the protection of the public against carelessness or fraud. But we call your attention to the matter at this early period in the use of diphtheria antitoxin in the hope that at least a warning of the medical profession and the public against spurious and unguaranteed preparations of this remedy, if not more drastic measures, may seem to you wise and useful, and appropriate to the functions of this Department as a guardian of the public health. Respectfully submitted,

(Signed) HERMANN M. BIGGS, M.D.,
Pathologist and Director of the Bacteriological Laboratory.
T. MITCHELL PRUDDEN, M.D.,
Consulting Physician to the Health Department in the Division of Pathology, Bacteriology and Disinfection.

Contagious Diseases.—Judging from the meager reports received from JOURNAL correspondents there is a remarkable diminution of the principal contagious diseases. The pandemic of diphtheria seems to have subsided as suddenly as it appeared; smallpox is, apparently, stationary—the only report received up to the 12th inst., being from Chicago, where there were, at that date, 63 cases in hospital, as against 67 one week previous. The outbreak at Sandwich, Ill., (population, 2,516, last census), resulted in 15 cases with 5 deaths, with 2 fatal cases at Aurora contracted at Sandwich; on the 12th there was but 1 (suspected) case remaining at Sandwich.

Diphtheria and the Antitoxin.—The commercial exploitation of the diphtheria antitoxin has been begun in this country. This was to be expected from the furore which has been created abroad over the discovery and from the prices charged for the foreign product—prices which would seem to afford an enormous profit. Thus, it is estimated in Belgium that a suitable horse can be bought for, say, $40; that it takes three months to render him immune, during which his keep and care, in that country, will cost $35 more; that he may then be bled three times, furnishing 9,000 grammes of the serum (or 450 doses of the strength prescribed by Dr. Roux), worth,

at quoted prices, 20 francs for 10 grammes, or $3,474—counting the franc at 19.3 cents American—for what cost $75 to produce. It is not to be wondered at that, at the suggestion of Dr. Jules Felix, of Brussels, delegate to the last International Congress of Hygiene, a resolution has been unanimously adopted calling upon the Belgian government to establish a State institute for the production, preservation and distribution of the antitoxin, with all possible guarantee to insure its purity and standard quality, and also to secure its gratuitous supply to all medical men in Belgium for the free treatment of the poor, and its supply at a reasonable price to those able to pay. In the absence of the possibility of any such safeguard in this country lies one of the chief dangers of the antitoxin treatment here, and that this danger is a serious one is shown by the rancorous dispute now raging between the rival manufacturers in Europe. In which connection, by the way, it is worth while noting that shares in the Höchst establishment—one of the chief antitoxin producers and with which Professor Behring's name is closely associated—went up several points on the Frankfort Stock Exchange recently, on a rumor that the works would soon put on the market a typhoid antitoxin of Behring's discovery. Surely Behring can not already have forgotten the blow to Robert Koch's scientific reputation through a similar commercial manipulation of his name by the adventurer Levy in connection with the "tuberculin cure."

National Diphtheria Commission.—Prompted thereto, doubtless, by the suggestion and arguments of the JOURNAL, Representative Goldzier, of Illinois, has prepared and will endeavor to secure the prompt adoption of the following preamble and joint resolution for the creation of a National Commission for the investigation of the antitoxin treatment of diphtheria:

WHEREAS, The following propositions are believed to be true, to-wit: That the disease known as diphtheria is one of the most destructive of human life in this country—ranking in this respect only after consumption, pneumonia and the diarrheal diseases; that it is steadily increasing in prevalence and in the number of its victims; that its mortality, under the usual methods of treatment, is equal to, or greater than, that of unmodified smallpox; that recent scientific developments in Europe seem to have evolved a method of treatment by which the mortality of the disease is reduced more than one-half, with promise of still better results; and that the details of this new method and the claims made for it should be thoroughly investigated and authoritatively reported upon for the information of the medical profession in the interests of the public health; therefore, be it

Resolved, By the House of Representatives, the Senate concurring, That the Secretary of the Treasury, the Secretary of War and the Secretary of the Navy be, and they are hereby, authorized and directed to create a commission for the investigation of the antitoxin treatment of diphtheria, said commission to be composed of not more than three officers of the medical services of each of the respective Departments, which officers shall be selected for their special qualifications for such investigation and shall serve without extra pay or emolument; that said commission shall immediately proceed to the proper localities for the necessary study and research and shall prepare, with as much promptness as is consistent with thoroughness, a report embodying the results of their investigation, which report, upon the joint approval of the Surgeons-General of the Army and Navy, and of the Supervising Surgeon-General of the Marine-Hospital Service, shall be published in a special edition of the Abstract of Sanitary Reports now published by the Treasury Department in accordance with the Act of Congress of Feb. 15, 1893.

Credit Side of the Cholera Account.—A reduction of more than 15 per cent. in the general death rate is, grossly stated, the claim made for the sanitary administration of Great Britain initiated by Sir John Simon in 1865, when he undertook the defense of that country against Asiatic cholera. Abandoning *in toto* the system of defense by quarantine restrictions, as against that individual disease, a vast machinery of notification, isolation and disinfection with reference to the infectious and contagious diseases generally, has been organized, the efficiency of which may be measured, with substantial accuracy, by the statistics of one group of diseases—the typhoid or enteric and other continued fevers. Thorne Thorne has recently shown that, whereas the mean annual death rate of this group was 567 per million living in the five years 1869–73, it was only 179 in the five years 1888–92; that if, during this latter quinquennium, people had died of these fevers at the rate at which they died in the former five-year period, there would have been during 1888–92 no fewer than 55,808 more deaths than actually occurred; and that had the same mortality obtained in 1892 that prevailed in 1869 no less than 14,232 persons who, at the end of 1892, had escaped death from these causes, would have died during that year. "In short," he says, "even if cholera had recurred in England and Wales between 1867 and 1892—a period during which that disease was practically absent from our midst—on the same scale as between 1849 and 1866, we should still be the gainer by several hundreds of thousands of human lives. And our gain in this respect is largely due to the incentive given by reason of cholera prospects and of the knowledge that the disease would have to be met by improved sanitary administration."

MISCELLANY.

Personal.—Gen. R. G. Dyrenfurth, an ex-Commissioner of Patents and well known from his experiments at "rain-making," is a graduate in medicine, his *alma mater* being the Baltimore College of Physicians and Surgeons.

Indiana Insane Asylum Report.—The annual report of the superintendent of the Northern Indiana Insane Hospital at Long Cliff, shows 508 inmates at present, with a total of 1,478 admitted. The hospital was opened in 1888. The capacity of the hospital has been increased by the construction of a new hall, and it is recommended that a further addition be erected with a capacity of eighty.

A New Food Supply.—According to *Das Schiff* two new industries have been created in Germany, owing to the development of the sea fisheries—the manufacture of sausages and of guano from fish. The sausages are made by stuffing skins with the prepared fish, as in ordinary meat sausages, and may be sold very cheap, not exceeding 1 franc per kilogram. The guano is made by adding chalk to the *debris* from the fish; it is then dried, reduced to powder and is highly appreciated as a fertilizer.

Thermometers for High Temperatures.—Mercurial thermometers give no exact indications beyond 250 degrees C., but when the tube is filled with nitrogen under pressure, temperatures up to 450 degrees C. may be registered. M. Niehl, at the Institute of Technical Physics in Berlin, has constructed thermometers which register up to 550 degrees, by substituting gaseous carbonic acid for nitrogen. The tubes are made of the boro-silicate glass from Jena, which does not melt below 600 degrees C.

Craig Colony for Epileptics.—Dr. William P. Spratling, of New York City, has been elected Superintendent of Craig Colony for Epileptics in that State. This institution was created by the last Legislature and embraces 1,800 acres of land in the famous Genesee Valley. There are now fifty-four buildings on the site, and the coming Legislature will be asked to appropriate $300,000 for the construction of an administration building, hospitals and observation cottages. The colony will be modeled largely after the celebrated German colony at Bielefeld.

New Institutions for the Sick in Maryland.—A new home for epileptics has been established at Port Deposit, Md., to be known as the Silver Cross House for Epileptics. The educated colored physicians of Baltimore purpose to inaugurate a hospital and dispensary, for people of color, and a building has been procured. There is said to be a colored population in that city amounting to 75,000, abundantly able to give support to an undertaking of this nature.

An additional State Hospital for the Insane will be built in 1895. The sum of $75,000 was appropriated by the last Legislature to that object.

Medallion of the late Professor Knox.—A memorial medallion of the late Prof. James Suydam Knox was presented to Rush Medical College by his widow, Mrs. Elizabeth H. Knox, December 5. The medallion is of bronze and was

made in Munich. The presentation ceremonies were simple and impressive. The President of the Faculty, Dr. Edward L. Holmes, presented the medallion on behalf of Mrs. Knox in a few well chosen words. Prof. J. H. Etheridge in accepting it paid a well merited tribute to the memory of his deceased colleague, and Rev. Dr. Withrow, who was a classmate of Dr. Knox at Princeton, and his pastor at the time of his death delivered a touching eulogy. The new medallion occupies a place on the wall of the amphitheater, to the right of the medallion of the late Prof. Moses Gunn. Busts of Brainerd and Parkes, and portraits of Blarney, Allen Freer, Miller and Ingals occupy spaces on the same wall.

Obstetric Forceps Statistics.—Schmid (*Jour. des Prat.*) gives a series of 2,926 deliveries in the Basle Hospital between May 1, 1887, and Dec. 31, 1893, of which number 156 (or 5.33 per cent. of the total) were delivered by the forceps, and of these 129 (or 83.3 per cent.) were primiparæ. Presentation in the second position was the most frequent cause for their use. The loss of blood was estimated at 591 grams on the average. In 132 cases (84 per cent.) the perineum was ruptured, and the wound healed by primary union in 92 cases. The mortality from all these deliveries was 1.28 per cent., but this was not due to the application of the forceps. The infant mortality was 12.2 per cent.—5.7 per cent. being the result of use of the forceps. Schmid recommends their use when the pains diminish owing to the prolonged labor, when the head is in a proper position, and when the second stage has lasted more than two and a half hours.

Philadelphia Notes.

Dr. J. Bernard Brinton, a member of the Academy of Natural Sciences of Philadelphia, and a botanist of more than local celebrity died Dec. 6, 1894. Dr. Brinton was born in New Hope, Pa., in 1835, and was graduated by the Jefferson Medical College just before the breaking out of the war. He was appointed a surgeon and afterwards became Medical Purveyor of the Army of Potomac. At the close of the war he resumed the practice of medicine in this city. Some twelve years since he retired from medical practice and devoted himself to manufacturing pursuits. He was an enthusiastic student of botany and was a leader in the Botanical Section of the Academy of Natural Sciences and one of the founders of the Botanical Club, of which he was President at the time of his death. He had a fine physique, his manners were affable and pleasing, and he was always ready to assist others from his fund of special knowledge; he had many friends especially among scientific circles.

Dr. Robert T. Morris, of New York City, by invitation of the Board of Directors, read a paper before the Philadelphia County Medical Society on "Specimens Illustrating each Step in the Progress of Infective Appendicitis," November 28. This discussion was an interesting one in which Drs. Wm. Pepper, John Ashhurst, Jr., J. Wm. White, James C. Wilson, Joseph Price, John H. Musser and others took part. A reception was given in honor of Dr. Morris at the University Club, after the close of the meeting which was generally attended by the members of the society and friends.

A Portrait of Dr. Thomas Bond Wanted.—A history of the Pennsylvania Hospital is now in press which will be incomplete unless a portrait can be found of Dr. Thomas Bond, formerly of Maryland, who came to Philadelphia in 1734, and was the originator and prime mover with Benjamin Franklin, of the plan for the institution of the first general hospital in this country. Any one who knows where a picture can be seen, or, better still, who will send a photograph of the portrait of Dr. Thomas Bond, will confer a great favor upon Dr. Thos. G. Morton, by sending such information or picture to his address, 1421 Chestnut Street, Philadelphia.

Prof. M. L. Coplin, of Jefferson Medical College, delivered a lecture before the Alumni Association of the Philadelphia College of Pharmacy, November 10, on "Bacteria and Bacteriology of which the Druggist Should Know." After giving an excellent *résumé* of the principal facts of modern bacteriology, and exhibiting specimen culture tubes of various forms, of which the chromogenous bacteria attracted most attention, he proceeded to impress upon his hearers the necessity of keeping antiseptic dressings free from the air, and he denounced the act of breaking packages to exhibit iodoform gauze or other dressings, for purchasers' inspection as little short of criminal. He also referred to the deteriorating action of air bacteria upon fluid extracts, ergot and other drugs and preparations, and insisted upon the great lesson of cleanliness. These remarks were listened to with close attention and were well received by a large audience gathered in the new hall of the Philadelphia College of Pharmacy, where the alumni meetings are held once a month and are attended by members, students and invited guests. The program usually includes a scientific address, and this is followed by general discussions, recitations and other exercises in a lighter vein; an afternoon hour is usually selected.

The Antitoxin Treatment of Diphtheria is now under trial at the Municipal, the Philadelphia, and the German Hospitals. A complete report will appear when the experiments have been finished, but a preliminary account was given before the Surgical Section of the College of Physicians, by Dr. George A. Muehlbeck at the November meeting which attracted much attention.

Water Filtration is now a burning topic of discussion in connection with the water supply of Philadelphia. Papers were read favoring the establishment of filtration reservoirs by Profs. A. C. Abbott and Henry Leffmann and the chairman of the water committee of city councils, at a meeting held at the Wister Institute of the University of Pennsylvania, December 7, and a joint committee has been named consisting of representatives of the Institute, the Civic Club, Women's Health Protective Association and the College of Physicians to urge the adoption of the plan now before councils.

New Orleans Notes.

Leprosy.—Last week witnessed the opening of a most important chapter in preventive medicine in this city and State, which was the transference of a number of lepers from their old and lamentably neglected quarters, to their new, where they will be wards of the State, and under the personal supervision of a resident physician. The leprosy bill passed by the last Legislature, providing for the segregation of these unfortunates, also provided for a hospital, and means for their proper care and maintenance, and under the provisions of which a beautiful site, the once famous Indian Camp Plantation on the eastern bank of the Mississippi River, ninety-five miles from New Orleans, was selected. Heretofore the lepers have been allowed to roam at will, but now an earnest and continuous effort will be made to send them all to the hospital and keep them there. The Board of Directors is as follows: Dr. Isadore Dyer, President; Dr. Henry Scherck, Secretary; Dr. Hooper, Vice-President; Dr. Wailes, Resident Physician; Dr. Edwards and Messrs. Allen Jumel, A. A. Woods, and A. G. Phelps.

Diphtheria.—Twenty-four cases of diphtheria have been injected with diphtheria antitoxin serum, with three deaths. These cases have not been selected but, with one exception, the regulation local and general treatment has been vigorously pursued; in the excepted case the antitoxin serum alone combated successfully with the disease.

State Medical Examining Board.—At the first examination of the State Medical Examining Board, fifteen physicians and ten midwives presented themselves. One physician failed to qualify. The questions asked were simple, but covered the ground very well.

Louisville Notes.

Dr. James B. Bullitt.—Upon the occasion of the opening of his new office, after a two years' residence in Globe, Ariz., as physician to the quartz mines, Dr. Bullitt received his professional friends between the hours of 3 and 5 P.M. on the 4th inst.

Bazar.—The Lady Board of Managers of the John N. Norton Memorial Infirmary held their annual bazar for the benefit of this institution on the 6th and 7th inst. Much interest was manifested and the ladies rewarded by a liberal patronage of the various booths and tables. A goodly sum was realized by these untiring workers.

Jeffersonville Health Report.—Dr. C. F. C. Hancock, Secretary of the Board of Health of Clark County, Ind., made a report to the Board of Commissioners at their annual meeting in Jeffersonville this week. During the year a marked epidemic of scarlet fever prevailed. The greatest number of cases were in Jeffersonville and suburbs. The type was, however, mild and the mortality slight. The total number of deaths from all causes for the year was 160; the

number of births reported 281. The Secretary recommends that two or three rooms be built in the jail where sick inmates may receive proper medical treatment. The board will elect a Secretary of the Board of Health at this session. Dr. Hancock is mentioned for reëlection.

DRUGGISTS AND PHYSICIANS.—Considerable complaint has been filed with the Botanical Club—the local society of pharmacists—because of different druggists in the city prescribing drugs and filling their own prescriptions; and a counter complaint made by the druggists that physicians are now carrying their own medicines, and also against them because they prescribe in such quantity the many proprietary medicines; that these come only in pound bottles or a lot of one hundred tablets in a bottle. A prescription calls for a few ounces, or a dozen tablets, and perhaps the rest is a waste. Two meetings have been held recently looking to an amicable adjustment of the difficulties; one at the invitation of the Botanical Club, the other at the last meeting of the Clinical Society, when Mr. M. Carey Peter and other representative druggists were the speakers of the evening. It was suggested, and favorably received, that the druggists furnish each physician of the State a copy of the National Formulary, and that so far as was in their power the physicians prescribe emulsions, tablets, etc., according to the Formulary, and thus obviate the necessity of the druggists carrying such a large stock of proprietary preparations.

NATIONAL BOARD OF HEALTH.—The general opinion expressed by local physicians has been of commendation for the stand President Cleveland has taken in his annual message recommending a National Board of Health. Though too far inland to be greatly in danger from epidemics brought to our coasts, Kentucky is in the front with other States with a progressive health board, and it is to be hoped the new Department will be created during the present session.

Hospital Notes.

PRESBYTERIAN HOSPITAL.—Efforts are being made to erect a Presbyterian Hospital in Memphis, Tenn.

THE FRANCIS JACOBS HOSPITAL at Denver, Colo., has been completed.

THE PRESBYTERIAN HOSPITAL, Chicago, is building a new operating theater.

DR. JOHN A. BEAUCHAMP has been appointed Superintendent of the Central Hospital for the Insane at Nashville, Tenn., *vice* J. H. Callender, resigned.

A HOSPITAL BURNED.—The Charity Hospital at Birmingham, Ala., was totally destroyed by a fire of incendiary origin, December 1. The original cost of the building was $40,000.

CITY COUNCIL OF MONTREAL.—The city council of Montreal, Ontario, have determined to reopen the contagious disease hospital in that city.

WOMAN'S HOSPITAL NEW YORK.—The Board of Governors of the Woman's Hospital in New York have completed the purchase of a site for the new building, the estimated cost of which is $1,400,000.

SOUTH SIDE HOSPITAL OF PITTSBURG.—The patients of the old South Side Hospital of Pittsburg were all removed to the new building November 28.

BEQUESTS TO HOSPITALS.—Under the will of the late Elizabeth Hemphill, the Presbyterian Hospital of Philadelphia receives $4,000, the Home for Incurables $12,000, the Home for Consumptives $4,000, Sanitarium for Sick Children $4,000. The late Senator Ross bequeaths to the Jeffrey Hospital, Toronto, the sum of $150,000. About $400,000 additional are bestowed upon religious and charitable objects. —The will of Julia Sexton, of Buffalo, gives $1,000 to the City Hospital, and $3,000 to the Church Charity Foundation.

ST. LUKE'S HOSPITAL, NEW YORK.—The annual report of this venerable institution, issued to Oct. 18, 1894, shows an increase of work performed in the year just closed. Twenty-three hundred patients—the largest number in any year—were treated, they receiving 76,021 days of hospital care; 65,714 days' care was given to the non-paying class. The total cost was $108,340, and the cost per capita was $1.41 per day. The paying patients brought into the treasury nearly $24,000, of which 25 per cent. was profit. The cost of nursing in 1894 was $16,400, nearly double what that service cost in 1888, which was the year in which the training school for nurses was established. To properly care for the paying-patients in private rooms, a large force of trained nurses and of untrained probationers is constantly required, not less than fifty of both classes, and this imposes an expense of $5,000 for the cost of living of these attendants in the hospital. This is at the cost of $100 per year for the board of each working inmate. The new home of this Hospital on One-Hundred and Thirteenth Street, it is expected, will be ready for occupancy on July 1, 1895.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from Dec. 1, 1894, to Dec. 7, 1894.

Capt. WALTER D. MCCAW, Asst. Surgeon, is granted leave of absence for four months, to take effect on or about Jan. 20, 1895, with authority to go beyond the sea.

First Lieut. ALEXANDER S. PORTER, Asst. Surgeon, is granted leave of absence for four months, on surgeon's certificate of disability, with permission to leave the Department of Dakota.

First Lieut. HENRY R. STILES, Asst. Surgeon, extension of leave of absence granted on surgeon's certificate of disability is further extended two months on account of sickness.

First Lieut. CHARLES LYNCH, Asst. Surgeon, is granted leave of absence for one month, to take effect on or about Dec. 10, 1894, with permission to apply for an extension of one month.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending Dec. 8, 1894.

Medical Inspector G. A. BRIGHT, ordered to the Navy Yard, New York.

Surgeon S. H. DICKSON, detached from the U. S. R. S. "Dale," and wait orders.

Surgeon DWIGHT DICKINSON, detached from the U. S. R. S. "Richmond," and to the U. S. S. "Minneapolis."

P. A. Surgeon M. F. GATES, detached from the U. S. R. S. "Richmond," and to the U. S. S. "Minneapolis."

Marine-Hospital Service.—The *Washington Star* of November 26 says: The report of Dr. Walter Wyman, Surgeon-General of the Marine-Hospital Service, shows that there were 52,808 seamen treated by the Service during the fiscal year ending June 30, 1894. A history of the cholera epidemic in Europe and measures to ward it from the United States are included. Dr. Wyman says:

"Cholera was not epidemic in any of the great seaports with which the United States has intimate commercial relations, though quite widely distributed in the interior of Europe. The regulation requiring labeling of the baggage of all immigrants and disinfection of suspected baggage with detention of immigrants from infected localities, was a potent factor in the protection of this country. The surveillance over vessels bringing merchandise and immigrants from infected localities required by the quarantine regulations was exercised by consuls at points of departure."

The Surgeon-General calls attention to the ever-recurring danger of yellow fever in the South, and the necessity of continued caution, due to the imperfect sanitary conditions at Havana and other West Indian and South American ports. With proper sanitation of these ports and more perfect sanitation of the seaboard cities of the South in the United States the danger from yellow fever would be minimized, if not removed altogether, and the embarrassing and expensive restraints of quarantine would become unnecessary. At present, however, the danger can only be met by quarantine.

Local authorities are said to have cooperated with the bureau willingly, and the Surgeon-General recommends a fund for purchasing and conducting those local quarantines whose authorities wish to place them under control of the government. A commission to determine the number of lepers in the United States and devise means for their segregation is recommended.

LETTERS RECEIVED.

Atkinson, Wm. B., Philadelphia, Pa.; Alta Pharmacal Co., St. Louis, Mo., (2); Aldrich, C. H., Washington, D. C.; Allport, Frank, Minneapolis, Minn.

Bryant, D. C., Omaha, Neb.; Brown, M. R., Chicago, Ill.; Brown, J. B., Dorchester, Mass.; Benchel, O. B., Battle Creek, Mich.; Brown, Bedford, Alexandria, Va.

Chaddock, C. G., St. Louis, Mo.; Cockey, Chas. H., Baltimore, Md.; Cram, F. W., Sheldon, Iowa.

Dornan, Wm., Jr., Philadelphia, Pa.; Daggett Table Co., Buffalo, N. Y.; Dunshie, J. F., New Orleans, La.; Davis, N. S., Chicago, Ill.; Dewey, R., Chicago, Ill.

Ferguson, M. B., Winnipeg, Manitoba; Frazee, A. B., Elbridge, N. Y.; Flannigan, Thos., Parral, Mexico.

Gaines, F. H. & F. M., Carrollton, Ky.; Gould, G. M., Philadelphia, Pa.; Gracey, L. F., Fayetteville, Ark.; Garber, J. B., Dunkirk, Ind.; Goodell, W. C.; Philadelphia, Pa.

Howle, W. P., Oran, Mo.; Hamilton, W. C., Philadelphia, Pa.; Hyde, J. Nevins, Chicago, Ill.; Hollingsworth & Mathie, St. Louis, Mo.

Jackson, Edward, Denver, Col., (2); Jones, Joseph, New Orleans, La. Krotoszyner, M., San Francisco, Cal.; Keen, Wm. C., Glasgow, Ky.

Lehn & Fink, New York City, (2); Laird, J. Wm., Douglas, Kan.; Longmans, Green & Co., New York City.

Meiller, K. D., St. Louis, Mo., (3); McKnight, J. F., Walnut Hill, Ark Nelson, Wolfred, New York City.

Prior, Amelia J., Cincinnati, Ohio; Phelps, A. M., New York City; Pischl, Kasper, San Francisco, Cal.; Parmele, C. R., New York City.

Rand, D. H., Portland, Ore.; Reed, R. Harvey, Columbus, Ohio.

Smith, G. C., Austin, Texas; Spraing, W. P., New York City; Schneck, J., Mt. Carmel, Ill.; Shepard, C. H., Brooklyn, N. Y., (2); Scott, X. C., Cleveland, Ohio; Southard, Carroll O., Palo Alto, Cal.; Shaw, E. R., New York City; Sauerhering, A., Mayville, Wis.

Woodward, Frank P., Pine Bluff, N. C.; Weir, J., West Union, Ill.; Wyckoff, R. M., Brooklyn, N. Y.; Woodbridge, J. E., Youngstown, Ohio; Woodbury, Frank, Philadelphia, Pa.

Erratum.—In the article of Dr. A. S. Ashmead in "Leprosy in America before the Advent of the Spaniards and the Negroes," page 848, 1st column, last line, instead of "Its appearance was, therefore, much *before* its appearance on the Pacific," read "*posterior* to its appearance."